

GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:34:55 ; Search time 39.1979 Seconds
(without alignments)
174.130 Million cell updates/sec

Title: US-09-910-082A-190

Perfect score: 378
Sequence: 1 MKLTCVIVAVLLLTACQLI.....PCSRIRAYNCTGSCRSKCG 71

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

earched: 283224 segs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	259.5	68.7	73	1 NTKN6G	omega-conotoxin GV
2	163.5	43.3	74	2 B59135	probable omega-con
3	135.5	35.8	78	2 S12513	delta-conotoxin Tx
4	135	35.7	77	2 S12514	conotoxin Tx-KK1 P
5	128	33.9	77	2 S12515	conotoxin Tx-KK2 P
6	126	33.3	81	1 A58651	delta-conotoxin PV
7	121	32.0	25	2 JH0700	omega-conotoxin MV
8	114.5	30.3	29	2 JH0699	omega-conotoxin MV
9	114	30.2	29	2 A58537	omega-conotoxin MV
10	105	27.8	25	2 JH0701	omega-conotoxin MV
11	98.5	26.1	80	2 A59135	probable delta-con
12	89.5	23.7	26	2 C44379	omega-conotoxin SV
13	72.5	19.2	775	2 T21436	hypothetical prote
14	67.5	17.9	29	2 A43620	omega-conotoxin GV
15	67.5	17.9	29	2 B43620	omega-conotoxin GV
16	66	17.5	2664	2 T28626	variant-specific s
17	64.5	17.1	111	2 S44787	D2007.1 protein -
18	64	16.9	397	2 JQ2153	proteinase inhibit
19	63.5	16.8	51	1 S07307	colicin A lysis pr
20	63	16.7	130	2 A38236	matng pheromone E
21	63	16.7	4753	1 A47437	LDL-receptor-relat
22	62.5	16.5	226	2 JQ2067	surface antigen -
23	62.5	16.5	366	2 T25042	hypothetical prote
24	61.5	16.3	52	2 T10299	conotoxin-like pro
25	61.5	16.3	174	2 B96543	hypothetical prote
26	61.5	16.3	909	1 ORXLL1	LDL receptor 1 pre
27	61.5	16.3	940	2 H71409	hypothetical prote
28	61	16.1	107	1 A60361	neuroparsin A prec
29	61	16.1	217	2 A10987	probable lipoprote

30	61	16.1	325	2 S68985	exogastrula-induct
31	61	16.1	477	2 T05202	pectinesterase hom
32	61	16.1	1239	2 T13809	probable disintegr
33	61	16.1	1650	2 S53457	dominant autoantig
34	61	16.1	4660	2 T42737	gp330 protein prec
35	60.5	16.0	139	2 S54085	probable membrane
36	60	15.9	24	2 B44379	omega-conotoxin SV
37	60	15.9	27	2 S19619	delta-conotoxin Tx
38	60	15.9	176	2 T17935	hypothetical prote
39	60	15.9	972	2 A30363	glycoprotein GP330
40	60	15.9	1290	2 T00018	period protein hom
41	60	15.9	1291	2 T00019	period protein hom
42	60	15.9	1369	2 S70713	protein-tyrosine k
43	59.5	15.7	650	2 H81708	hypothetical prote
44	59.5	15.7	2150	2 T32497	hypothetical prote
45	59	15.6	106	2 T27989	hypothetical prote

ALIGNMENTS

RESULT 1
NTKN6G
omega-conotoxin GVIB precursor [validated] - cone shell (Conus geographus)
N/Alternate names: shaker peptide GVIB
N/Contains: omega-conotoxin GVIA; omega-conotoxin GVIC
C/Species: Conus geographus (geography cone)
C/Date: 25-Feb-1985 #sequence_revision 23-Mar-1995 #text_change 15-Sep-2000
C/Accession: A44006; A60133; B60133; A01785
R/Colledge, C.J.; Hunsperger, J.P.; Imperial, J.S.; Hillyard, D.R.
Toxicon 30, 1111-1116, 1992
A/Title: Precursor structure of omega-conotoxin GVIA determined from a cDNA clone.
A/Reference number: A44006; MUID:93069266; PMID:1440648
A/Accession: A44006
A/Molecule type: mRNA
A/Residues: 1-73 <COL>
A/Cross-references: GB:M84612; NID:g156520; PIDN:AAA81590.1; PID:g1070393
A/Experimental source: venom duct
A/Note: sequence extracted from NCBI backbone (NCBIN:119531, NCBIPI:119532)
R/Olivera, B.M.; Gray, W.R.; Zeikus, R.; McIntosh, J.M.; Varga, J.; Rivier, J.; de Sa
Science 230, 1338-1343, 1985
A/Title: Peptide neurotoxins from fish-hunting cone snails.
A/Reference number: A43620; MUID:86070213; PMID:4071055
A/Accession: A60133
A/Molecule type: protein
A/Residues: 46-73 <OL1>
A/Accession: B60133
A/Molecule type: protein
A/Residues: 46-71 <OL2>
R/Olivera, B.M.; McIntosh, J.M.; Cruz, L.J.; Luque, F.A.; Gray, W.R.
Biochemistry 23, 5087-5090, 1984
A/Title: Purification and sequence of a presynaptic peptide toxin from Conus geograph
A/Reference number: A01785; MUID:85072796; PMID:6509012
A/Accession: A01785
A/Molecule type: protein
A/Residues: 46-72 <OL3>
R/Nishinuchi, Y.; Kumagaye, K.; Noda, Y.; Watanabe, T.X.; Sakakibara, S.
Biopolymers 25, S61-S68, 1986
A/Title: Synthesis and secondary-structure determination of omega-conotoxin GVIA: a 2
A/Reference number: A49017; MUID:87049928; PMID:3779030
A/Contents: annotation
A/Note: disulfide bonds determined and confirmed by chemical synthesis
R/Davis, J.H.; Bradley, E.K.; Miljanich, G.P.; Nadasdi, L.; Ramachandran, J.; Basus,
submitted to the Brookhaven Protein Data Bank, April 1993
A/Reference number: A51894; PDB:1OMC
R/Davis, J.H.; Bradley, E.K.; Miljanich, G.P.; Nadasdi, L.; Ramachandran, J.; Basus,
Biochemistry 32, 7396-7405, 1993
A/Title: Solution structure of omega-conotoxin GVIA using 2-D NMR spectroscopy and re
A/Reference number: A58536; MUID:93332945; PMID:8338837
A/Contents: annotation; conformation by (1)H-NMR
R/Pallaghy, P.K.; Duggan, B.M.; Pennington, M.W.; Norton, R.S.
submitted to the Brookhaven Protein Data Bank, August 1993

A;Reference number: A51089; PDB:1CCO
A;Contents: annotation; conformation by (1)H-NMR, residues 46-72
C;Comment: There are several types of conotoxins: alpha, acting on postsynaptic membrane neurotoxin.
C;Superfamily: omega-conotoxin
C;Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel inh
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-45/Domain: propeptide #status predicted <PRO>
F;46-73/Product: omega-conotoxin GVIB #status experimental <MAT1>
F;46-72/Product: omega-conotoxin GVIA #status experimental <MAT2>
F;46-71/Product: omega-conotoxin GVIC #status experimental <MAT3>
F;46-61,53-64,60-71/Disulfide bonds: #status experimental
F;49,55,66/Modified site: 4-hydroxyproline (Pro) #status experimental
F;72/Modified site: amidated carboxyl end (Tyr) (amide in mature form from following gly

Query Match
Best Local Similarity 68.7%; Score 259.5; DB 1; Length 73;
Matches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1;

QY 1 MKLTCVIVAVLLLTACQLITADDSRGTHKRALRSDTKLSMSTRCKGTGKPCSRIAYNC 60
Db 1 MKLTCVIVAVLLLTACQLITADDSRGTHKRALGSTELSLSTRCKSPGSSCSPTSYNC 60

QY 61 CTGSC 65
Db 61 CR-SC 64

RESULT 2
B59135
probable omega-conotoxin Pulia precursor - cone shell (Conus pulicarius)
C;Species: Conus pulicarius
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 05-Nov-1999
C;Accession: B59135
R;Zhao, D.; Yao, J.; Dai, Q.; Huang, P.
submitted to GenBank, March 1999
A;Reference number: A59135
A;Accession: B59135
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-74 <ZHA>
A;Cross-references: GB:AF132130; NID:g4928439; PIDN:AAD33586.1; PID:g4928440
C;Genetics:
A;Gene: pulia
C;Superfamily: omega-conotoxin
C;Keywords: calcium channel inhibitor; presynaptic neurotoxin; venom
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-45/Domain: propeptide #status predicted <PRO>
F;46-74/Product: omega-conotoxin Pulia #status predicted <MAT>
F;48-62,55-66,61-73/Disulfide bonds: #status predicted

Query Match
Best Local Similarity 43.3%; Score 163.5; DB 2; Length 74;
Matches 39; Conservative 4; Mismatches 22; Indels 1; Gaps 1;

QY 1 MKLTCVIVAVLLLTACQLITADDSRGTHKRALRSDTKLSMSTRCKGTGKPCSRIAYN 59
Db 1 MKLTCVIVAVLLLTACQLITAEYTSRGEQKHALSSTDKNKSLTRTCNTPTQYCTLHRH 60

QY 60 CCTGSC 65
Db 61 CCSLYC 66

RESULT 3
S12513
delta-conotoxin TxVIA precursor - cone shell (Conus textile)
N;Alternate names: conotoxin IA; King-Kong peptide (KK-0)
C;Species: Conus textile (cloth-of-gold cone)
C;Date: 19-Mar-1997 #sequence_revision 11-Apr-1997 #text_change 16-Jul-1999
C;Accession: S12513; A30103; S19553
R;Woodward, S.R.; Cruz, L.J.; Olivera, B.M.; Hillyard, D.R.
EMBO J. 9, 1015-1020, 1990

A;Title: Constant and hypervariable regions in conotoxin propeptides.
A;Reference number: S12513; MUID:90214607; PMID:1691090
A;Accession: S12513
A;Molecule type: mRNA
A;Residues: 1-78 <WOO>
A;Cross-references: EMBL:X53283; NID:g10887; PIDN:CAA37377.1; PID:g10888
R;Hillyard, D.R.; Olivera, B.M.; Woodward, S.; Corpuz, G.P.; Gray, W.R.; Ramilo, C.A.
Biochemistry 28, 358-361, 1989
A;Title: A molluscivorous Conus toxin: conserved frameworks in conotoxins.
A;Reference number: A30103; MUID:89207553; PMID:2706261
A;Accession: A30103
A;Molecule type: protein
A;Residues: 52-78 <HIL>
R;Fainzilber, M.; Gordon, D.; Hasson, A.; Spira, M.E.; Zlotkin, E.
Eur. J. Biochem. 202, 589-595, 1991
A;Title: Mollusc-specific toxins from the venom of Conus textile neovicarius.
A;Reference number: S19553; MUID:92104183; PMID:1761058
A;Accession: S19553
A;Molecule type: protein
A;Residues: 52-78 <FAI>
C;Superfamily: omega-conotoxin
C;Keywords: neurotoxin; sodium channel inhibitor; venom
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-51/Domain: propeptide #status predicted <PRO>
F;52-78/Product: delta-conotoxin TxVIA #status experimental <MAT>
F;53-68,60-72,67-77/Disulfide bonds: #status predicted

Query Match
Best Local Similarity 35.8%; Score 135.5; DB 2; Length 78;
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVIVAVLLLTACQLITADDSRG-----TQKRALRSDTKLSMSTR-CKGTGKPC 53
Db 1 MKLTCMIVAVLFTAWTFATADDPFRNGLNLSNAHHEMKNPASKLNKRWCKQSGEMC 60

QY 54 SRIAYNCTGSC 65
Db 61 NLLDQNCDCGYC 72

RESULT 4
S12514
conotoxin Tx-KK1 precursor - cone shell (Conus textile)
N;Alternate names: King-Kong peptide
C;Species: Conus textile (cloth-of-gold cone)
C;Date: 19-Mar-1997 #sequence_revision 11-Apr-1997 #text_change 16-Jul-1999
C;Accession: S12514
R;Woodward, S.R.; Cruz, L.J.; Olivera, B.M.; Hillyard, D.R.
EMBO J. 9, 1015-1020, 1990
A;Title: Constant and hypervariable regions in conotoxin propeptides.
A;Reference number: S12513; MUID:90214607; PMID:1691090
A;Accession: S12514
A;Molecule type: mRNA
A;Residues: 1-77 <WOO>
A;Cross-references: EMBL:X53284; NID:g10889; PIDN:CAA37378.1; PID:g10890
C;Superfamily: omega-conotoxin
C;Keywords: neurotoxin; venom
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-51/Domain: propeptide #status predicted <PRO>
F;52-77/Product: conotoxin Tx-KK1 #status predicted <MAT>
F;52-67,59-71,66-76/Disulfide bonds: #status predicted

Query Match
Best Local Similarity 35.7%; Score 135; DB 2; Length 77;
Matches 28; Conservative 10; Mismatches 27; Indels 6; Gaps 1;

QY 1 MKLTCVIVAVLLLTACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPCS 54
Db 1 MKLTCMIVAVLFTAWTFATADDSNGLNLSKAHHEMKNPASKLNKRCIEQDPCE 60

QY 55 RIAYNCTGSC 65
Db 61 MIRHTCCVGC 71

RESULT 5

conotoxin Tx-KK2 precursor - cone shell (Conus textile)
N/Alternate names: King-Rong peptide (KK-2)
C/Species: Conus textile (cloth-of-gold cone)
C/Date: 19-Mar-1997 #sequence_revision 11-Apr-1997 #text_change 16-Jul-1999
C/Accession: S12515
R;Woodward, S.R.; Cruz, L.J.; Olivera, B.M.; Hillyard, D.R.
EMBO J. 9, 1015-1020, 1990
A/Title: Constant and hypervariable regions in conotoxin propeptides.
A/Reference number: S12513; MUID:90214607; PMID:1691090
A/Accession: S12515
A/Molecule type: mRNA
A/Residues: 1-77 <WOO>
A/Cross-references: EMBL:X53285; NID:g10891; PIDN:CA37379.1; PID:g10892
A/Superfamily: omega-conotoxin
A/Keywords: neurotoxin; venom
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-51/Domain: propeptide #status predicted <PRO>
F;52-77/Product: conotoxin Tx-KK2 #status predicted <MAT>
F;52-67, 59-71, 66-76/Disulfide bonds: #status predicted

Query Match

Query Match	33.98;	Score 128;	DB 2;	Length 77;
Best Local Similarity	38.08;	Pred. No. 2e-06;		
Matches 27;	Conservative 12;	Mismatches 26;	Indels 6;	Gaps 1;

```

QY      1 MKLTCVIVAVLLLTACQLITADDSRG-----TQKHRLALRSDTKLSMSTRCKGTGKPCS 54
      .      |||||:||||| ||| :|||||      :: | ::| ::| |||
Db      1 MKLTCMIVAVLELTAVTFTVTTADDSGNGLENLEFSKAHHEKKNPEASNLNKKRCADFLHPCT 60

```

```

QY      55 RIAYNCTGSC 65
          |||
Db      61 FFFPNCNSYC 71

```

RESULT 6

A58651
delta-conotoxin PVIA precursor - cone shell (Conus purpurascens)
N/Alternate names: lockjaw peptide
C/Species: Conus purpurascens (purple cone)
C/Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C/Accession: A58651
R/Shon, R.J.; Grilley, M.M.; Marsh, M.; Yoshikami, D.; Hall, A.R.; Kurz, B.; Gray, W.R.;
Biochemistry 34, 4913-4918, 1995
A/Title: Purification, characterization, synthesis, and cloning of the lockjaw peptide from
A/Reference number: A58651; MUID:95226378; PMID:7711013

Query Match

Query Match	33.38;	Score 126;	DB 1;	Length 81;
Best Local Similarity	41.08;	Pred. No. 3.4e-06;		
Matches 32; Conservative	6;	Mismatches 32;	Indels 8;	Gaps 2;

```
QY 1 MKLTCVIVAVLLLTACOLITADDSR-GTQKH-----RALRSDTKLSMSTRCKGTGKP 52
.      |||||:||||| ||| :|||||: | : |      | : ||      |
Db 1 MKLTCVMIVAVLELTATWTFVTADDSKNGLENHFWKARDEMKNRREASKLDDKEACYPGT 60
```

```
QY      53 CSRIAYNCCTGSCRSKC 70
          |  ||: |  |  |
Db      61 CGIKPGLCCSEFCLPGVC 78
```

RESULT 7

JH0700
omega-conotoxin MVIIA [validated] - cone shell (Conus magus)
C/Species: Conus magus (magus cone)
C/Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 15-Sep-2000
C/Accession: JH0700; C60133; A34115
R/Hillyard, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasdi, L.; Ramachandran, J.
Neuron 9, 69-77, 1992
A/Title: A new conus peptide ligand for mammalian presynaptic Ca2+ channels.
A/Reference number: JH0699; MUID:92337922; PMID:1352986
A/Accession: JH0700
A/Status: nucleic acid sequence not shown
A/Molecule type: mRNA
A/Residues: 1-25 <HIL>
R/Oliviera, B.M.; Gray, W.R.; Zeikus, R.; McIntosh, J.M.; Varga, J.; Rivier, J.; de Sa
Science 230, 1338-1343, 1985
A/Title: Peptide neurotoxins from fish-hunting cone snails.
A/Reference number: A43620; MUID:86070213; PMID:4071055
A/Accession: C60133

Query Match

Query Match	32.0%;	Score 121;	DB 2;	length 25;
Best Local Similarity	76.0%;	Pred. No. 4.9e-06;		
Matches 19; Conservative	2;	Mismatches 4;	Indels 0;	Gaps 0;

```
QY      46 CKGTGKPCSR IYNCCTGSCRSKC 70
      ||| | ||| : : ||| ||| |||
Db      1 CKGKGA KCSRIMYDCCTGSCRSKC 25
```

RESULT 8

omega-conotoxin MVIIC precursor [validated] - cone shell (Conus magus) (fragment)
 C:Species: Conus magus (magus cone)
 C:Date: 17-Apr-1993 #sequence_revision 11-Apr-1997 #text_change 15-Sep-2000
 C:Accession: JH0699; PC2380
 R:Hillyard, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasdi, L.; Ramachandran, J.
 Neuron 9, 69-77, 1992
 A:Title: A new cone peptide ligand for mammalian presynaptic Ca2+ channels.
 A:Reference number: JH0699; MUID:92337922; PMID:1352986

Biochem. Biophys. Res. Commun. 207, 695-700, 1995
A;Title: Solution structure of omega-conotoxin MVIIC determined by NMR.
A;Reference number: PC2380; MUID:95169113; PMID:7864862
A;Accession: PC2380
A;Molecule type: protein
A;Residues: 3-28 <NEM>
R;Farr-Jones, S.; Basus, V.J.
submitted to the Brookhaven Protein Data Bank, December 1994
A;Reference number: A66297; PDB:1OMN
A;Contents: annotation; conformation by (1)H-NMR, residues 3-28.
R;Farr-Jones, S.; Miljanich, G.P.; Nadasdi, L.; Ramachandran, J.; Basus, V.J.
J. Mol. Biol. 248, 106-124, 1995
A;Title: Solution structure of omega-conotoxin MVIIC, a high affinity of P-type calcium
A;Reference number: A58582; MUID:95248539; PMID:7731037
A;Contents: annotation; conformation by (1)H-NMR
C;Superfamily: omega-conotoxin
C;Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel inh
F;3-28/Product: omega-conotoxin MVIIC #status experimental <MAT>
F;3-18,10-22,17-28/Disulfide bonds: #status experimental
F;28/Modified site: amidated carboxyl end (Cys) (amide in mature form from following gly

Query Match 30.3%; Score 114.5; DB 2; Length 29;
Best Local Similarity 65.5%; Pred. No. 2.6e-05;
Matches 19; Conservative 3; Mismatches 6; Indels 1; Gaps 1;

OY 44 TRCKGTGKPCSRIRAYNCTGSGC-RSGKCG 71
||||| | | | : | : ||||| | | | |
Db 1 TRCKGKCAPCRKMTMYDCSCSGCRGKCG 29

RESULT 9
A58537
omega-conotoxin MVIID precursor - cone shell (Conus magus) (fragment)
C;Species: Conus magus (magus cone)
C;Date: 27-Mar-1997 #sequence_revision 11-Apr-1997 #text_change 16-Jul-1999
C;Accession: A58537
R;Monje, V.D.; Haack, J.A.; Naisbitt, S.R.; Miljanich, G.; Ramachandran, J.; Nadasdi, L.
Neuropharmacology 32, 1141-1149, 1993
A;Title: A new Conus peptide ligand for Ca channel subtypes.
A;Reference number: A58537; MUID:94150815; PMID:8107968
A;Accession: A58537
A;Molecule type: mRNA
A;Residues: 1-29 <MON>
A;Cross-references: GB:S69322; NID:g545399; PIDN:AAB29902.1; PID:g545400
A;Note: the predicted peptide was chemically synthesized and alternative disulfide bonds
C;Superfamily: omega-conotoxin
C;Keywords: toxin; venom
F;4-29/Product: omega-conotoxin MVIID #status predicted <MAT>
F;4-19,11-23,18-28/Disulfide bonds: #status predicted

Query Match 30.2%; Score 114; DB 2; Length 29;
Best Local Similarity 58.6%; Pred. No. 2.9e-05;
Matches 17; Conservative 4; Mismatches 8; Indels 0; Gaps 0;

OY 43 STRCKGTGKPCSRIRAYNCTGSGCRSGKCG 71
||||| | | | : | : ||||| | | | |
Db 1 STRCQGRGASCRKTMYNCCSGSCNRGRCG 29

RESULT 10
JH0701
omega-conotoxin MVIIB - cone shell (Conus magus)
C;Species: Conus magus (magus cone)
C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 23-May-1997
C;Accession: JH0701; B34115
R;Hillyard, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasdi, L.; Ramachandran, J.; M
Neuron 9, 69-77, 1992
A;Title: A new conus peptide ligand for mammalian presynaptic Ca2+ channels.
A;Reference number: JH0699; MUID:92337922; PMID:1352986
A;Accession: JH0701
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-25 <HIL>

R;Olivera, B.M.; Cruz, L.J.; de Santos, V.; LeCheminant, G.W.; Griffin, D.; Zelkus, R
Biochemistry 26, 2086-2090, 1987
A;Title: Neuronal calcium channel antagonists. Discrimination between calcium channel
A;Reference number: A34115; MUID:87299637; PMID:2441741
A;Accession: B34115
A;Molecule type: protein
A;Residues: 1-25 <OLI>
C;Superfamily: omega-conotoxin
C;Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel
F;1-16,8-20,15-25/Disulfide bonds: #status predicted
F;25/Modified site: amidated carboxyl end (Cys) #status predicted

Query Match 27.8%; Score 105; DB 2; Length 25;
Best Local Similarity 64.0%; Pred. No. 0.00022;
Matches 16; Conservative 2; Mismatches 7; Indels 0; Gaps 0;

OY 46 CKGTGKPCSRIRAYNCTGSGCRSGKC 70
||||| | | | : | : ||||| | | | |
Db 1 CKGKGASCHRISYDCCTGSCNRGKC 25

RESULT 11
A59135
probable delta-conotoxin PU1A precursor - cone shell (Conus pulicarius)
C;Species: Conus pulicarius
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 05-Nov-1999
C;Accession: A59135
R;Zhao, D.; Yao, J.; Dai, Q.; Huang, P.
submitted to GenBank, March 1999
A;Reference number: A59135
A;Accession: A59135
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-80 <ZHA>
A;Cross-references: GB:AF132129; NID:g4928437; PIDN:AAD33585.1; PID:g4928438
C;Genetics:
A;Gene: pu1A
C;Superfamily: omega-conotoxin
C;Keywords: neurotoxin; sodium channel inhibitor; venom
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-50/Domain: propeptide #status predicted <PRO>
F;51-80/Product: delta-conotoxin PU1A #status predicted <MAT>
F;52-70,59-74,69-78/Disulfide bonds: #status predicted

Query Match 26.1%; Score 98.5; DB 2; Length 80;
Best Local Similarity 37.3%; Pred. No. 0.0023;
Matches 28; Conservative 7; Mismatches 29; Indels 11; Gaps 3;

OY 1 MKLTCVIVAVLLITACQLITADDSRGTKHRLRSDTKISMSTR-----CKGTGKPCS 54
||||| | | | | | | | : | | | | | : | : | | | | |
Db 1 MKLTCVMIVAVLEFLTAWTFVTADSIKLEDLFAKAPDEMENSASPLNERDCRPVGYCYG 60

OY 55 RIAY---NCTGSGC 65
| | | | : | : |
Db 61 -IPYEHNWRCCSQC 74

RESULT 12
C44379
omega-conotoxin SVIB [validated] - cone shell (Conus striatus)
N;Alternate names: SNX-183
C;Species: Conus striatus (striated cone)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 15-Sep-2000
C;Accession: C44379
R;Ramilo, C.A.; Zafaralla, G.C.; Nadasdi, L.; Hammerland, L.G.; Yoshikami, D.; Gray,
Biochemistry 31, 9919-9926, 1992
A;Title: Novel alpha- and omega-conotoxins from Conus striatus venom.
A;Reference number: A44379; MUID:93003172; PMID:1390774
A;Accession: C44379
A;Molecule type: protein
A;Residues: 1-26 <RAM>
A;Cross-references: CAS:143306-19-8
A;Experimental source: venom

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GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:32:50 ; Search time 76.9167 seconds
(without alignments)
190.197 Million cell updates/sec

Title: US-09-910-082A-190

Perfect score: 378

Sequence: 1 MKLTGVIVAVLLLTACQLI.....PCSRIRYNCCTGSCRSKCG 71

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL_21:*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rv1rus:*
16: sp_bacteriap:*
17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	339	89.7	66	5 Q9NCV1	Q9ncv1 conus stria
2	331	87.6	66	5 Q9N6N6	Q9n6n6 conus stria
3	328	86.8	66	5 Q9NCV3	Q9ncv3 conus stria
4	327	86.5	66	5 Q9NCV4	Q9ncv4 conus stria
5	324	85.7	66	5 Q9NCV2	Q9ncv2 conus stria
6	323	85.4	66	5 Q9NCV0	Q9ncv0 conus stria
7	312	82.5	66	5 Q9NCU1	Q9ncu1 conus stria
8	309	81.7	66	5 Q9N628	Q9n628 conus catus
9	309	81.7	66	5 Q9NCW3	Q9ncw3 conus catus
10	304	80.4	66	5 Q9N633	Q9n633 conus catus
11	304	80.4	66	5 Q9N625	Q9n625 conus catus
12	303	80.2	66	5 Q9NCW4	Q9ncw4 conus catus
13	302	79.9	66	5 Q9NCW1	Q9ncw1 conus catus
14	300	79.4	66	5 Q9NCV5	Q9ncv5 conus catus
15	299	79.1	66	5 Q9NCW6	Q9ncw6 conus catus
16	299	79.1	66	5 Q9NCW2	Q9ncw2 conus catus

17	298	78.8	66	5 Q9NCW5	Q9ncw5 conus catus
18	297	78.6	66	5 Q9NCV7	Q9ncv7 conus catus
19	296	78.3	66	5 Q9N6F7	Q9n6f7 conus catus
20	292	77.2	66	5 Q9NCV6	Q9ncv6 conus catus
21	291	77.0	66	5 Q9NCW0	Q9ncw0 conus catus
22	286	75.7	66	5 Q9N6F8	Q9n6f8 conus catus
23	281	74.3	66	5 Q9NCV9	Q9ncv9 conus catus
24	274	72.5	66	5 Q9NCV8	Q9ncv8 conus catus
25	228.5	60.4	72	5 Q9XZL5	Q9xzl5 conus stria
26	225.5	59.7	72	5 Q9XZL4	Q9xzl4 conus stria
27	223.5	59.1	67	5 Q9N646	Q9n646 conus stria
28	219.5	58.1	67	5 Q9NCU7	Q9ncu7 conus stria
29	204.5	54.1	67	5 Q9N604	Q9n604 conus stria
30	204.5	54.1	67	5 Q9NCU2	Q9ncu2 conus stria
31	203.5	53.8	67	5 Q9NCU5	Q9ncu5 conus stria
32	201.5	53.3	67	5 Q9NCU3	Q9ncu3 conus stria
33	197.5	52.2	72	5 Q9NCU8	Q9ncu8 conus stria
34	194.5	51.5	67	5 Q9NCU6	Q9ncu6 conus stria
35	192.5	50.9	67	5 Q9NCU4	Q9ncu4 conus stria
36	192.5	50.9	72	5 Q9NCU9	Q9ncu9 conus stria
37	175	46.3	81	5 Q9BP83	Q9bp83 conus arena
38	168.5	44.6	79	5 Q9BP78	Q9bp78 conus arena
39	162.5	43.0	71	5 Q9UA87	Q9ua87 conus abbre
40	159.5	42.2	71	5 Q9TVX4	Q9tvx4 conus abbre
41	156.5	41.4	70	5 Q9BP80	Q9bp80 conus arena
42	152.5	40.3	71	5 Q9UA90	Q9ua90 conus abbre
43	151.5	40.1	70	5 Q9BP82	Q9bp82 conus arena
44	150.5	39.8	71	5 Q9UA88	Q9ua88 conus abbre
45	150.5	39.8	76	5 Q9BP81	Q9bp81 conus arena

ALIGNMENTS

RESULT 1

ID	Q9NCV1	PRELIMINARY;	PRT;	66 AA.
AC	Q9NCV1;			
DT	01-OCT-2000 (TREMBLrel. 15, Created)			
DT	01-OCT-2000 (TREMBLrel. 15, last sequence update)			
DT	01-JUN-2002 (TREMBLrel. 21, last annotation update)			
DE	Four-loop conotoxin (Fragment).			
OS	Conus striatus (Striated cone).			
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;			
OC	Neogastropoda; Conoidea; Conidae; Conus.			
OX	NCBI_TaxID=6493;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=CSTRH_1_6;			
RA	Duda T.F., Palumbi S.R.;			
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";			
RL	Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.			
DR	EMBL; AF174245; AAF89909.1; .			
DR	HSSP; P05484; IMVI.			
DR	InterPro; IPR004214; Conotoxin.			
DR	Pfam; PF02950; Conotoxin; 1.			
FT	NON_TER	1		
SO	SEQUENCE	66 AA;	6976 MW;	29A992736137DA05 CRC64;

Query Match 89.7%; Score 339; DB 5; Length 66;
Best Local Similarity 97.0%; Pred. No. 2.3e-36;
Matches 64; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY	6	VIVAVLLLTACQLITADSRGTQKHRLRSDTKLSMSTRCKGTGKPCSRIRYNCCTGSC	65
DB	1	VIVAVLLLTACQLITADSRGTQKHRLRSDTKLSMSTRCKAAGKPCSRIRYNCCTGSC	60
QY	66	RSGBKCG 71	
DB	61	RSGBKCG 66	

RESULT 2

Q9N6N6 PRELIMINARY; PRT; 66 AA.
AC Q9N6N6; 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_5, AND CSTRH_1_1;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RT Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
RL EMBL; AF174244; AAF89908.1; -
DR EMBL; AF174240; AAF89904.1; -
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6966 MW; 29A992710CA7DA05 CRC64;

Query Match 87.6%; Score 331; DB 5; Length 66;
Best Local Similarity 95.5%; Pred. No. 2.5e-35;
Matches 63; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 6 VVIVAVLLLTACQLITADDSRGTOGKRALRSDTKLSMSTRCKGTGKPCSRIRAYNCCTGSC 65
DB 1 VVIVAVLLLTACQLITADDSRGTOGKRALRSDTKLSMSTRCKAAGKSCSRIRAYNCCTGSC 60
QY 66 RSGKCG 71
DB 61 RSGKCG 66

RESULT 3

Q9NCV3 PRELIMINARY; PRT; 66 AA.
AC Q9NCV3; 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_3;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RT Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
RL EMBL; AF174242; AAF89906.1; -
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7019 MW; 89B89B7AF1A7C7B3 CRC64;

Query Match 86.8%; Score 328; DB 5; Length 66;
Best Local Similarity 93.9%; Pred. No. 6.2e-35;
Matches 62; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

QY 6 VVIVAVLLLTACQLITADDSRGTOGKRALRSDTKLSMSTRCKGTGKPCSRIRAYNCCTGSC 65
DB 1 VVIVAVLLLTACQLITADDSRGTOGKRALRSDTKLSMSTRCKAAGKPCSRIRAYNCCTGSC 60

QY 66 RSGKCG 71
DB 61 RSGKCG 66

RESULT 4

Q9NCV4 PRELIMINARY; PRT; 66 AA.
AC Q9NCV4; 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_2;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RT Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
RL EMBL; AF174241; AAF89905.1; -
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6980 MW; 286F491D7CA7DA05 CRC64;

Query Match 86.5%; Score 327; DB 5; Length 66;
Best Local Similarity 93.9%; Pred. No. 8.3e-35;
Matches 62; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 6 VVIVAVLLLTACQLITADDSRGTOGKRALRSDTKLSMSTRCKGTGKPCSRIRAYNCCTGSC 65
DB 1 VVIVAVLLLTACQLITADDSRGTOGKRALRSDTKLSMSTRCKAAGKSCSRIRAYNCCTGSC 60
QY 66 RSGKCG 71
DB 61 RSGKCG 66

RESULT 5

Q9NCV2 PRELIMINARY; PRT; 66 AA.
AC Q9NCV2; 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_4;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RT Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
RL EMBL; AF174243; AAF89907.1; -
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7033 MW; 887E401681A7C7B3 CRC64;

Query Match 85.7%; Score 324; DB 5; Length 66;
Best Local Similarity 92.4%; Pred. No. 2e-34;

Matches 61; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

QY 6 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRAYNCCTGSC 65
|||||
Db 1 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKAAGKCSRIAYNCCTGSC 60

QY 66 RSGKCG 71
|||||
Db 61 RSGKCG 66

RESULT 6

Q9NCV0 PRELIMINARY; PRT; 66 AA.

AC Q9NCV0;
DT 01-OCT-2000 (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";
RL Submitted (AUG-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF174246; AAF89910.1; -.
DR HSSP; P05484; IMVT.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6981 MW; 20CDC33D7CA7DA05 CRC64;

Query Match 85.4%; Score 323; DB 5; Length 66;
Best Local Similarity 92.4%; Pred. No. 2.7e-34;
Matches 61; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 6 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRAYNCCTGSC 65
|||||
Db 1 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKAAGKCSRIAYNCCTGSC 60

QY 66 RSGKCG 71
|||||
Db 61 RSGKCG 66

RESULT 7

Q9NCU1 PRELIMINARY; PRT; 66 AA.

AC Q9NCU1;
DT 01-OCT-2000 (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_1;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";
RL Submitted (AUG-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF174267; AAF89931.1; -.
DR HSSP; P05484; IMVT.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.

FT NON_TER 1 1
SQ SEQUENCE 66 AA; 6951 MW; 0D9868C0A7A1A39F CRC64;

Query Match 82.5%; Score 312; DB 5; Length 66;
Best Local Similarity 89.4%; Pred. No. 7.2e-33;
Matches 59; Conservative 2; Mismatches 5; Indels 0; Gaps 0;

QY 6 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRAYNCCTGSC 65
|||||
Db 1 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKAAGKCSRIAYNCCTGSC 60

QY 66 RSGKCG 71
|||||
Db 61 RSGKCG 66

RESULT 8

Q9N628 PRELIMINARY; PRT; 66 AA.

AC Q9N628;
DT 01-OCT-2000 (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11I_9, AND CCATH_11I_6;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";
RL Submitted (AUG-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF174229; AAF89893.1; -.
DR EMBL; AF174226; AAF89890.1; -.
DR HSSP; P05484; IMVT.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7057 MW; E7AA5E310968B7DA CRC64;

Query Match 81.7%; Score 309; DB 5; Length 66;
Best Local Similarity 87.9%; Pred. No. 1.8e-32;
Matches 58; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 6 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRAYNCCTGSC 65
|||||
Db 1 VVIVAVLLTTACOLITADDSRGTKHRLRSDTKLSMSTRCKGTGASCRSYDCCTGSC 60

QY 66 RSGKCG 71
|||||
Db 61 RSGKCG 66

RESULT 9

Q9NCW3 PRELIMINARY; PRT; 66 AA.

AC Q9NCW3;
DT 01-OCT-2000 (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11I_7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-

RT eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174220; AAF89884.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1 1
SQ SEQUENCE 66 AA; 7054 MW; E9FE5E310968A1AC CRC64;

Query Match 81.7%; Score 309; DB 5; Length 66;
Best Local Similarity 87.9%; Pred. No. 1.8e-32;
Matches 58; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 6 VVIVAVLLLTACQLITADDSRGTKQKRALRSDTKLSMSTRCKGTGKPCSRRIAYNCTGSC 65
DB 1 VVIVAVLLLTACQLITADDSRGTKQKRALRSDTKLSMSTRCKGTGKPCSRRTSYDCTGSC 60

QY 66 RSGKCG 71
DB 61 RSGRCG 66

RESULT 10

ID Q9N633 PRELIMINARY; PRT; 66 AA.
AC Q9N633;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11_6, CCATH_11_1, AND CCATH_11_2;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174219; AAF89883.1; -.
DR EMBL; AF174214; AAF89878.1; -.
DR EMBL; AF174215; AAF89879.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1 1
SQ SEQUENCE 66 AA; 7053 MW; E445338A6968A1AC CRC64;

Query Match 80.4%; Score 304; DB 5; Length 66;
Best Local Similarity 86.4%; Pred. No. 7.8e-32;
Matches 57; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY 6 VVIVAVLLLTACQLITADDSRGTKQKRALRSDTKLSMSTRCKGTGKPCSRRIAYNCTGSC 65
DB 1 VVIVAVLLLTACQLITANDSRGTQKRALRSDTKLSMSTRCKGTGKPCSRRTSYDCTGSC 60

QY 66 RSGKCG 71
DB 61 RSGRCG 66

RESULT 11

ID Q9N625 PRELIMINARY; PRT; 66 AA.
AC Q9N625;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;

OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=VARIOUS STRAINS;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174228; AAF89892.1; -.
DR EMBL; AF174221; AAF89885.1; -.
DR EMBL; AF174222; AAF89886.1; -.
DR EMBL; AF174224; AAF89888.1; -.
DR EMBL; AF174225; AAF89889.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1 1
SQ SEQUENCE 66 AA; 7056 MW; EA11338A6968B7DA CRC64;

Query Match 80.4%; Score 304; DB 5; Length 66;
Best Local Similarity 86.4%; Pred. No. 7.8e-32;
Matches 57; Conservative 4; Mismatches 5; Indels 0; Gaps 0;

QY 6 VVIVAVLLLTACQLITADDSRGTKQKRALRSDTKLSMSTRCKGTGKPCSRRIAYNCTGSC 65
DB 1 VVIVAVLLLTACQLITANDSRGTQKRALRSDTKLSMSTRCKGTGKPCSRRTSYDCTGSC 60

QY 66 RSGKCG 71
DB 61 RSGRCG 66

RESULT 12

ID Q9NCW4 PRELIMINARY; PRT; 66 AA.
AC Q9NCW4;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11_5;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174218; AAF89882.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1 1
SQ SEQUENCE 66 AA; 6995 MW; E445338A6A7A1AC CRC64;

Query Match 80.2%; Score 303; DB 5; Length 66;
Best Local Similarity 86.4%; Pred. No. 1e-31;
Matches 57; Conservative 3; Mismatches 6; Indels 0; Gaps 0;

QY 6 VVIVAVLLLTACQLITADDSRGTKQKRALRSDTKLSMSTRCKGTGKPCSRRIAYNCTGSC 65
DB 1 VVIVAVLLLTACQLITANDSRGTQKRALRSDTKLSMSTRCKGTGKPCSRRTSYDCTGSC 60

QY 66 RSGKCG 71
DB 61 RSGRCG 66

RESULT 13

ID Q9N625 PRELIMINARY; PRT; 66 AA.
AC Q9N625;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;

Q9NCW1 PRELIMINARY; PRT; 66 AA.
AC Q9NCW1;
DT 01-OCT-2000 (TREMUREL. 15, Created)
DT 01-OCT-2000 (TREMUREL. 15, Last sequence update)
DT 01-JUN-2002 (TREMUREL. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11L_7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174227; AAF89891.1; -.
DR HSSP; P05484; IMVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7066 MW; EA11338A6968B415 CRC64;

Query Match 79.9%; Score 302; DB 5; Length 66;
Best Local Similarity 86.4%; Pred. No. 1.4e-31;
Matches 57; Conservative 3; Mismatches 6; Indels 0; Gaps 0;

QY 6 VVIVAVLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRITAYNCCTGSC 65
Db 1 VVIVAVLLTACQLITANDSRGTOKHRLRSDTKLSMSTRCKSTGASCRTPTDCCCTGSC 60
QY 66 RSGKCG 71
Db 61 RSGRCG 66

RESULT 14
Q9NCV5 PRELIMINARY; PRT; 66 AA.
AC Q9NCV5;
DT 01-OCT-2000 (TREMUREL. 15, Created)
DT 01-OCT-2000 (TREMUREL. 15, Last sequence update).
DT 01-JUN-2002 (TREMUREL. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_R_4;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174238; AAF89902.1; -.
DR HSSP; P05484; IMVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7081 MW; 66E4898A6968B31B CRC64;

Query Match 79.4%; Score 300; DB 5; Length 66;
Best Local Similarity 84.8%; Pred. No. 2.6e-31;
Matches 56; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

Db 61 RSGRCG 66

RESULT 15
Q9NCW6 PRELIMINARY; PRT; 66 AA.
AC Q9NCW6;
DT 01-OCT-2000 (TREMUREL. 15, Created)
DT 01-OCT-2000 (TREMUREL. 15, Last sequence update)
DT 01-JUN-2002 (TREMUREL. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11L_3;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174216; AAF89880.1; -.
DR HSSP; P05484; IMVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7023 MW; E445339B6968B0AC CRC64;

Query Match 79.1%; Score 299; DB 5; Length 66;
Best Local Similarity 84.8%; Pred. No. 3.4e-31;
Matches 56; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 6 VVIVAVLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRITAYNCCTGSC 65
Db 1 VVIVAVLLTACQLITANDSRGAQKHRLRSDTKLSMSTRCKGKASGASCRPTSYDCCCTGSC 60
QY 66 RSGKCG 71
Db 61 RSGRCG 66

Search completed: May 20, 2003, 15:40:51
Job time : 77.9167 secs

QY 6 VVIVAVLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRITAYNCCTGSC 65
Db 1 VVIVAVLLTACQLITANDSRGTOKHRLRSDTKLSMSTRCKGASGASCRPTSYDCCCTGSC 60
QY 66 RSGKCG 71

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OY 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR1AYNC 60
DB 1 MKLTCMVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKAGKPCSR1AYNC 60
OY 61 CTGSCRSKCG 71
DB 61 CTGSCRSKCG 71
RESULT 2
CXOA_CONMA STANDARD; PRT; 71 AA.
ID CXOA_CONMA
AC P05484;
DT 01-NOV-1988 (Rel. 09, Created)
DT 15-JUN-2002 (Rel. 41, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin MVIIA precursor (SNX-111) (Ziconotide).
OS Conus magus (Magus cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6492;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Venom duct;
RX PubMed=10938268;
RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,
RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,
RA Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;
RT "Novel omega-conotoxins from Conus catus discriminate among neuronal
RT calcium channel subtypes";
RL J. Biol. Chem. 275:35335-35344(2000).
RN [2]
RP SEQUENCE OF 46-70.
RX MEDLINE=86070213; PubMed=4071055;
RA Olivera B.M., Gray W.R., Zeikus R.D., McIntosh J.M., Varga J.,
RA Rivier J.E., de Santos V., Cruz L.J.;
RT "Peptide neurotoxins from fish-hunting cone snails";
RL Science 230:1338-1343(1985).
RN [3]
RP SEQUENCE OF 46-70.
RX MEDLINE=87299637; PubMed=2441741;
RA Olivera B.M., Cruz L.J., de Santos V., Lechmanant G.W., Griffin D.,
RA Zeikus R.D., McIntosh J.M., Galyean R., Varga J., Gray W.R.;
RA Rivier J.E.;
RT "Neuronal calcium channel antagonists. Discrimination between calcium
RT channel subtypes using omega-conotoxin from Conus magus venom.";
RL Biochemistry 26:2086-2090(1987).
RN [4]
RP DISULFIDE BONDS.
RX PubMed=8537186;
RT Chung D., Gaur S., Bell J.R., Ramachandran J., Nadasdi L.;
RT "Determination of disulfide bridge pattern in omega-conopeptides";
RL Int. J. Pept. Protein Res. 46:320-325(1995).
RN [5]
RP SYNTHESIS, AND MUTAGENESIS OF LYS-47 AND TYR-58.
RX PubMed=7826361;
RA Kim J.I., Takahashi M., Ohtake A., Wakamiya A., Sato K.;
RT "Tyr13 is essential for the activity of omega-conotoxin MVIIA and
RT GVIA, specific N-type calcium channel blockers";
RL Biochem. Biophys. Res. Commun. 206:449-454(1995).
RN [6]
RP STRUCTURE BY NMR.
RX MEDLINE=95367555; PubMed=7640281;
RA Kohno T., Kim J.-I., Kobayashi K., Kodera Y., Maeda T., Sato K.;
RT "Three-dimensional structure in solution of the calcium channel
RT blocker omega-conotoxin MVIIA";
RL Biochemistry 34:10256-10265(1995).
RN [7]
RP STRUCTURE BY NMR.
RX PubMed=7656969;
RA Basus V.J., Nadasdi L., Ramachandran J., Miljanich G.P.;
RT "Solution structure of omega-conotoxin MVIIA using 2D NMR

RT spectroscopy";
RL FEBS Lett. 370:163-169(1995).
RN [8]
RP STRUCTURE BY NMR.
RX MEDLINE=97070382; PubMed=8913308;
RA Nielsen K.J., Thomas L., Lewis R.J., Alewood P.F., Craik D.J.;
RT "A consensus structure for omega-conotoxins with different
RT selectivities for voltage-sensitive calcium channel subtypes:
RT comparison of MVIIA, SVIB and SNX-202";
RL J. Mol. Biol. 263:297-310(1996).
RN [9]
RP STRUCTURE BY NMR.
RX PubMed=10373375;
RA Nielsen K.J., Adams D., Thomas L., Bond T., Alewood P.F., Craik D.J.,
RA Lewis R.J.;
RT "Structure-activity relationships of omega-conotoxins MVIIA, MVIIIC and
RT 14 loop splice hybrids at N and P/Q-type calcium channels";
RL J. Mol. Biol. 289:1405-1421(1999).
RN [10]
RP STRUCTURE BY NMR.
RX PubMed=10747778;
RA Atkinson R.A., Kieffer B., DeJaegere A., Sirockin F., Lefevre J.-F.;
RT "Structural and dynamic characterization of omega-conotoxin MVIIA: the
RT binding loop exhibits slow conformational exchange";
RL Biochemistry 39:3908-3919(2000).
RN [11]
RP STRUCTURE BY NMR.
RX MEDLINE=21243158; PubMed=11344322;
RA Goldenberg D.P., Koehn R.E., Gilbert D.E., Wagner G.;
RT "Solution structure and backbone dynamics of an omega-conotoxin
RT precursor";
RL Protein Sci. 10:538-550(2001).
RN [12]
RP FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks N-type calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- PHARMACEUTICAL: Is under clinical trial by Neurex. It blocks acute
CC pain in patients who no longer obtain relief from opiate drugs. It
CC is 100 to 1000 times more potent than morphine. By blocking
CC calcium channels it disable nerves that transmit pain signals.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
CC -1- DATABASE: NAME=Ziconotide Source; NOTE=Web site on ziconotide;
CC WWW="http://docmd.com/ziconotide/".
CC PIR: C60133; C60133.
DR PIR: JH0700; JH0700.
DR PDB: 1OMG; 03-APR-96.
DR PDB: 1MVI; 12-AUG-97.
DR PDB: 1DW4; 01-MAR-00.
DR PDB: 1DW5; 01-MAR-00.
DR PDB: 1FEO; 23-AUG-00.
DR Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation; signal; 3D-structure; Pharmaceutical.
KW SIGNAL. 1 22
FT PROPEP 23 45
FT PEPTIDE 46 70
FT DISULFID 46 61
FT DISULFID 53 65
FT DISULFID 60 70
FT MOD_RES 70 70
FT MUTAGEN 47 47
FT MUTAGEN 47 47
FT SEQUENCE 58 58
SQ 71 AA; 7587 MW; E2A32725C81AF31D CRC64;
OY 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR1AYNC 60
DB 1 MKLTCMVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKGKACSR1MYDC 60
Query Match 88.1%; Score 333; DB 1; Length 71;
Best Local Similarity 88.7%; Pred. No. 2e-29;
Matches 63; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

DT 15-JUN-2002 (Rel. 41, last annotation update)
DE Omega-conotoxin CVID precursor.
OS Conus catus (Cat cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A., SEQUENCE OF 46-72, SYNTHESIS, AND STRUCTURE BY
NR NMR.
RC TISSUE-Venom duct, and Venom;
RX PubMed=10938268;
RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,
RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,
RA Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;
RT "Novel omega-conotoxins from Conus catus discriminate among neuronal
RT calcium channel subtypes."
RL J. Biol. Chem. 275:35335-35344(2000).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC) (By
CC similarity). This toxin blocks N-type calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation; Signal.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 45
FT PEPTIDE 46 72 OMEGA-CONOTOXIN CVID.
FT DISULFID 46 61 BY SIMILARITY.
FT DISULFID 53 65 BY SIMILARITY.
FT DISULFID 60 72 BY SIMILARITY.
FT MOD_RES 72 72 AMIDATION (G-73 PROVIDE AMIDE GROUP).
SQ SEQUENCE 73 AA; 7748 MW; C4CEBD30C77DAEC3 CRC64;

Query Match 81.7%; Score 309; DB 1; Length 73;
Best Local Similarity 80.8%; Pred. No. 7.8e-27;
Matches 59; Conservative 5; Mismatches 7; Indels 2; Gaps 1;

QY 1 MKLTGVIVAVLLTACQLTADDSRGTQKHRLRSDTKLMSSTRCKGTFGRPSRIAYNC 60
DB 1 MKLTGVIVAVLLTACQLTADDSRGTQKHRLRSDTKLMSSTRCKSKGAKSKLMYDC 60

QY 61 CTGSCRS--GKCG 71
DB 61 CSGSCSGTIVGRCG 73

RESULT 6
CX06_CONGE STANDARD; PRT; 73 AA.
P01522;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-FEB-1994 (Rel. 28, last sequence update)
DT 15-JUN-2002 (Rel. 41, last annotation update)
DE Omega-conotoxin GVIA precursor (Shaker peptide) (SNX-124) [Contains:
DE Omega-conotoxin GVIB; Omega-conotoxin GVIC].
OS Conus geographus (Geography cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6491;
RN [1]
RP SEQUENCE FROM N.A.
RP MEDLINE=93069266; PubMed=1440648;
RA Colledge C.J., Hunsperger J.P., Imperial J.S., Hillyard D.R.;
RT "precursor structure of omega-conotoxin GVIA determined from a cDNA
RT clone."
RL Toxicon 30:1111-1116(1992).
RN [2]
RP SEQUENCE OF 46-73.
RX MEDLINE=85072796; PubMed=6509012;
RA Olivera B.M., McIntosh J.M., Cruz L.J., Luque F.A., Gray W.R.;
RT "Purification and sequence of a presynaptic peptide toxin from Conus

RT geographus venom."
RL Biochemistry 23:5087-5090(1984).
RN [3]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE=94047089; PubMed=8230223;
RA Pallaghy P.K., Dugan B.M., Pennington M.W., Norton R.S.;
RT "Three-dimensional structure in solution of the calcium channel
RT blocker omega-conotoxin."
RL J. Mol. Biol. 234:405-420(1993).
RN [4]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE=93332945; PubMed=8338837;
RA Davis J.H., Bradley E.K., Miljanich G.P., Nadasdi L.,
RA Ramachandran J., Basus V.J.;
RT "Solution structure of omega-conotoxin GVIA using 2-D NMR
RT spectroscopy and relaxation matrix analysis."
RL Biochemistry 32:7396-7405(1993).
RN [5]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE=99248506; PubMed=10231724;
RA Pallaghy P.K., Norton R.S.;
RT "Refined solution structure of omega-conotoxin GVIA: implications for
RT calcium channel binding."
RL J. Pept. Res. 53:343-351(1999).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.

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DR EMBL; M84612; AAA81590.1; -
DR PIR; A60133; NTKN6G.
DR PIR; A44006; A44006.
DR PDB; 2CCO; 15-JUL-98.
DR PDB; 1OMC; 31-JAN-94.
DR InterPro; IPR004214; Conotoxin.
DR pfam; PF02950; Conotoxin; 1.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Hydroxylation; Amidation; Signal; 3D-structure.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 45
FT PEPTIDE 46 73 OMEGA-CONOTOXIN GVIB.
FT PEPTIDE 46 72 OMEGA-CONOTOXIN GVIA.
FT PEPTIDE 46 71 OMEGA-CONOTOXIN GVIC.
FT MOD_RES 49 49 HYDROXYLATION.
FT MOD_RES 55 55 HYDROXYLATION.
FT MOD_RES 66 66 HYDROXYLATION.
FT MOD_RES 72 72 AMIDATION (G-73 PROVIDE AMIDE GROUP) (IN
FT GVIA).
FT DISULFID 46 61
FT DISULFID 53 64
FT DISULFID 60 71
FT STRAND 47 47
FT TURN 49 50
FT STRAND 52 52
FT TURN 55 58
FT STRAND 60 60
FT STRAND 64 65
FT TURN 66 69
FT STRAND 70 71
SQ SEQUENCE 73 AA; 7851 MW; 51A8C8FA630F7175 CRC64;

Query Match 68.7%; Score 259.5; DB 1; Length 73;
Best Local Similarity 80.0%; Pred. No. 1.6e-21;

OY		1	MKLTGVIVAVLLTACQLTTADDSRGTOKHRALRSDTKLMSSTRCKGTGKPCSRIAYNC	60	
DB		1	MKLTGVIVAVALLTFACQLTTADDSRGTOKHRALGSTLSTLRCKSPSSCSPTSYNC	60	
OY		61	CTGSC	65	
DB		61	CR-SC	64	
RESULT 7					
ID	CXK7_CONPU	STANDARD;	PRT;	72 AA.	
AC	P56633;				
DT	15-DEC-1998 (Rel. 37, Created)				
DT	15-JUN-2002 (Rel. 41, Last sequence update)				
DT	15-JUN-2002 (Rel. 41, Last annotation update)				
E	KAPPA-conotoxin PVIIA precursor (Fin-popping peptide).				
S	Conus purpurascens (Purple cone).				
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;				
CC	Neogastropoda; Conoidea; Conidae; Conus.				
OX	NCBI_TaxID=41690;				
RN	[1]				
RP	SEQUENCE FROM N.A., AND SYNTHESIS.				
RX	MEDLINE-98079023; PubMed-9417043;				
RA	Shon K.-J., Stocker M., Terlau H., Stuehmer W., Jacobsen R.B.,				
RA	Walker C.S., Grilley M.M., Watkins M., Hillyard D.R., Gray W.R.,				
RA	Olivera B.M.;				
RT	"Kappa-conotoxin PVIIA is a peptide inhibiting the shaker K+				
RT	channel.";				
RL	J. Biol. Chem. 273:33-38(1998).				
RN	[2]				
RP	SEQUENCE OF 46-72, AND SYNTHESIS.				
RX	PubMed-12074021;				
RA	Terlau H., Shon K.-J., Grilley M.M., Stocker M., Stuehmer W.,				
RA	Olivera B.M.;				
RT	"Strategy for rapid immobilization of prey by a fish-hunting marine				
RT	snail.";				
RL	Nature 381:148-151(1996).				
RN	[3]				
RP	STRUCTURE BY NMR.				
RC	TISSUE-Venom;				
RX	MEDLINE-98104087; PubMed-9438859;				
RA	Scanlon M.J., Naranjo D., Thomas L., Alewood P.F., Lewis R.J.,				
RA	Craik D.J.;				
RT	"Solution structure and proposed binding mechanism of a novel				
RT	potassium channel toxin kappa-conotoxin PVIIA."				
RL	Structure 5:1585-1597(1997).				
RN	[4]				
RP	STRUCTURE BY NMR.				
RX	MEDLINE-98217295; PubMed-9548922;				
RA	Savarin P., Guennegues M., Gilquin B., Lamthan H., Gasparini S.,				
RA	Zinn-Justin S., Menez A.;				
RT	"Three-dimensional structure of kappa-conotoxin PVIIA, a novel				
RT	potassium channel-blocking toxin from cone snails.";				
RL	Biochemistry 37:5407-5416(1998).				
RN	[5]				
RP	MUTAGENESIS OF ARG-47; ILE-48; PRO-49; ASN-50; GLN-51; LYS-52; PHE-54;				
RP	PHE-54; GLN-55; HIS-56; LEU-57; ASP-58; ASP-59; SER-62; ARG-63;				
RP	LYS-64; ARG-67; PHE-68; ASN-69 AND LYS-70.				
RX	PubMed-10818087;				
RA	Jacobsen R.B., Koch E.D., Lange-Malecki B., Stocker M., Verhey J.,				
RA	Van Wagener R.M., Vyazovkina A., Olivera B.M., Terlau H.;				
RT	"Single amino acid substitutions in kappa-conotoxin PVIIA disrupt				
RT	interaction with the shaker K+ channel.";				
RL	J. Biol. Chem. 275:24639-24644(2000).				
RN	[6]				
RP	BLOCKADE OF SHAKER CHANNEL BY PVIIA.				
RX	PubMed-10398696;				
RA	Terlau H., Boccaccio A., Olivera B.M., Conti F.;				
RT	"The block of Shaker K+ channels by kappa-conotoxin PVIIA is state				
RT	dependent.";				

QY	1	MULTICVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRIVNC	60
Query Match	61.8%;	Score 233.5; DB 1; Length 72;	
Best Local Similarity	67.6%;	Pred. No. 9.9e-19;	
Matches 48; Conservative	6; Mismatches 16; Indels 1; Gaps 1;		


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ID CX01_CONST STANDARD: PRT; 72 AA.
AC O9XZL4;
DT 15-JUN-2002 (Rel. 41, Created)
DT 15-JUN-2002 (Rel. 41, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin SVIA mutant 1 precursor.
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RS TISSUE-Venom duct;
RX MEDLINE=20037955; PubMed=10573284;
RA Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;
RT "Conopeptides from Conus striatus and Conus textile by cDNA
   cloning.";
RL Peptides 20:1139-1144(1999).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
   and block voltage-sensitive calcium channels (VSCC) (By
   similarity).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
   FAMILY.
-----
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-----
DR EMBL: AF146360; AAD31920.1; -.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation; Hydroxylation; Signal.
FT SIGNAL          1      22      POTENTIAL.
FT PROPEP         23     48      POTENTIAL.
FT PEPTIDE        49     72      OMEGA-CONOTOXIN SVIA MUTANT 1.
FT DISULFID       49     63      BY SIMILARITY.
FT DISULFID       56     66      BY SIMILARITY.
FT DISULFID       62     71      BY SIMILARITY.
FT MOD_RES        55     55      HYDROXYLATION (BY SIMILARITY).
FT MOD_RES        72     72      AMIDATION (BY SIMILARITY).
SQ SEQUENCE       72 AA; 7804 MW; 4A7E0560B1AD5420 CRC64;
Query Match           59.7%; Score 225.5; DB 1; Length 72;
Best Local Similarity 63.0%; Pred. No. 7.1e-18;
Matches 46; Conservative 7; Mismatches 15; Indels 5; Gaps 2;
OY 1 MKLTGVIVAVLLTFACOLITADDSRGTKHRLRSD---TKLSMSTRCKGTGKPCSRIA 57
    |||||
DB 1 MKLTCVVIVAVLLTFACQILTAEADSRAQKHRTLSTARSRSSELTTRCRPSGSPCG--V 58
OY 58 YNCCTGSGCRSGKC 70
    : | | | | |
DB 59 TSICGRCRYGKC 71
RESULT 11
CX05_CONST STANDARD: PRT; 77 AA.
AC Q9XZK4;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-type conotoxin S05 precursor.
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;

```

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OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-Venom duct;
RX MEDLINE=20037955; PubMed=10573284;
RA Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;
RT "Conopeptides from Conus striatus and Conus textile by cDNA
cloning.";
RL Peptides 20:1139-1144(1999).
CC -! FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
and block voltage-sensitive calcium channels (VSCC) (By
similarity).
CC -! SUBCELLULAR LOCATION: Secreted (By similarity).
CC -! TISSUE SPECIFICITY: Expressed by the venom duct.
CC -! SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
FAMILY.
-----
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CC
CC
CC EMBL: AF146350; AAD31910.1; -.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Signal.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 42 POTENTIAL.
FT PEPTIDE 43 77 OMEGA-TYPE CONOTOXIN SO5.
FT DISULFID 46 61 BY SIMILARITY.
FT DISULFID 53 64 BY SIMILARITY.
FT DISULFID 60 71 BY SIMILARITY.
FT DISULFID 60 71 BY SIMILARITY.
SQ SEQUENCE 77 AA; 8372 MW; 0FB5F480C7709CE9 CRC64;

Query Match 58.9%; Score 222.5; DB 1; Length 77;
Best Local Similarity 70.8%; Pred. No. 1.6e-17;
Matches 46; Conservative 3; Mismatches 15; Indels 1; Gaps 1;

OY 1 MKLTGVIVAVLLTTACQLITADDSRGTKHRLRSDPKISMSTRCKGTGKPCSRIAYNC 60
|||||:|||||||:|||||||:||||| ||| | | | | |
Db 1 MKLTCVMIVAVLLTTACQLITADDSRGTKHRLRSTTRKVSSTSCMEAGSYCGSTTRIC 60

OY 61 CTGSC 65
| | |
Db 61 C-GYC 64

RESULT 12
CXO4_CONST ID CXO4_CONST STANDARD; PRT; 78 AA.
AC Q9XZK3;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-type conotoxin SO4 precursor.
GN SO4.
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Metaconidae; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-Venom duct;
RX MEDLINE=20037955; PubMed=10573284;
RA Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;
RT "Conopeptides from Conus striatus and Conus textile by cDNA
cloning.";
RL Peptides 20:1139-1144(1999).

```

CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC) (By
CC similarity).
CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
CC -----
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CC -----
CC EMBL: AF146349; AAD31909.1; -.
CC InterPro: IPR004214; Conotoxin.
CC Pfam: PF02950; Conotoxin; 1.
CC Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
CC Signal.
CC FT SIGNAL 1 22 POTENTIAL.
CC FT PROPEP 23 42 POTENTIAL.
CC FT PEPTIDE 43 78 OMEGA-TYPE CONOTOXIN S04.
CC FT DISULFID 46 62 BY SIMILARITY.
CC FT DISULFID 53 65 BY SIMILARITY.
CC FT DISULFID 61 72 BY SIMILARITY.
CC FT DISULFID 61 72 BY SIMILARITY.
CC SQ SEQUENCE 78 AA; 8527 MW; A391E1EF9210C6C8 CRC64;

Query Match 57.98; Score 219; DB 1; Length 78;
Best Local Similarity 67.78; Pred. No. 3.8e-17;
Matches 44; Conservative 4; Mismatches 17; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVLLITACQLITADSRGTQKHRLRSDTKLSMSTRCKGTGKPCSRVAYNC 60
Db 1 MKLTCVIVAVLLITACQLITADSRGTQKHRLRSDTKLSMSTRCKGTGKPCSRVAYNC 60

QY 61 CTGSC 65
Db 61 CCGFC 65

RESULT 13
CX2_CONPL STANDARD; PRT; 74 AA.
ID Q9XVZ1;
AC 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin Putia precursor.
RN Putia.
RS Conus pulicarius (Flea-bite cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=93154;
RN [1]
RP SEQUENCE FROM N.A.
RA Zhao D., Yao J., Dai Q., Huang P.;
RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC) (By
CC similarity).
CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
CC -----
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CC -----
CC EMBL: AF132130; AAD33586.1; -.
CC InterPro: IPR004214; Conotoxin.
CC Pfam: PF02950; Conotoxin; 1.
CC Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
CC Signal.
CC FT SIGNAL 1 22 POTENTIAL.
CC FT PROPEP 23 46 POTENTIAL.
CC FT PEPTIDE 47 74 OMEGA-CONOTOXIN PUTIA.
CC FT DISULFID 48 62 BY SIMILARITY.
CC FT DISULFID 55 66 BY SIMILARITY.
CC FT DISULFID 61 73 BY SIMILARITY.
CC SQ SEQUENCE 74 AA; 8318 MW; 8B9265C15A669440 CRC64;

Query Match 43.38; Score 163.5; DB 1; Length 74;
Best Local Similarity 59.18; Pred. No. 3.3e-11;
Matches 39; Conservative 4; Mismatches 22; Indels 1; Gaps 1;

QY 1 MKLTCVIVAVLLITACQLITADD-SRGTQKHRLRSDTKLSMSTRCKGTGKPCSRVAYN 59
Db 1 MKLTCVIVAVLLITACQLITAEYTSRGEOKHRLSSTDKNKRLTRCNTPTQYCTLHRH 60

QY 60 CTGSC 65
Db 61 CCGFC 66

RESULT 14
CX2_CONTE STANDARD; PRT; 78 AA.
ID CX2_CONTE
AC P18511;
DT 01-NOV-1990 (Rel. 16, Created)
DT 01-NOV-1990 (Rel. 16, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Delta-conotoxin TxvIA precursor (TxvIA) (Conotoxin King-Kong 0) (KK-0).
OS Conus textile (Cloth-of-gold cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6494;
RN [1]
RP SEQUENCE FROM N.A.
RA Woodward S.R., Cruz L.J., Olivera B.M., Woodward S.R., Corpuz G.P., Gray W.R.,
RA Hillyard D.R., Olivera B.M., Woodward S.R., Corpuz G.P., Gray W.R.,
RA Ramillo C.A., Cruz L.J.;
RA "A molluscivorous Conus toxin: conserved frameworks in conotoxins.";
RL Biochemistry 28:358-361(1989).
RN [2]
RP SEQUENCE OF 52-78.
RA MEDLINE=89207553; PubMed=2706261;
RA Hillyard D.R., Olivera B.M., Woodward S.R., Corpuz G.P., Gray W.R.,
RA Ramillo C.A., Cruz L.J.;
RA "A molluscivorous Conus toxin: conserved frameworks in conotoxins.";
RL Biochemistry 28:358-361(1989).
RN [3]
RP SEQUENCE OF 52-78.
RA STRAIN=Neovicarius;
RA MEDLINE=92104183; PubMed=1761058;
RA Fainzilber M., Gordon D., Hasson A., Spira M.E., Zlotkin E.;
RA "Mollusc-specific toxins from the venom of Conus textile
RA neovicarius.";
RL Eur. J. Biochem. 202:589-595(1991).
RN [4]
RP CHARACTERIZATION.
RA MEDLINE=94084232; PubMed=8261090;
RA Hasson A., Fainzilber M., Gordon D., Zlotkin E., Spira M.E.;
RA "Alteration of sodium currents by new peptide toxins from the venom of
RA a molluscivorous Conus snail.";
RL Eur. J. Neurosci. 5:56-64(1993).
RN [5]
RP CHARACTERIZATION.
RA PubMed=8300586;
RA Fainzilber M., Kofman O., Zlotkin E., Gordon D.;
RA "A new neurotoxin receptor site on sodium channels is identified by a

RT conotoxin that affects sodium channel inactivation in molluscs and
RT acts as an antagonist in rat brain.";
RL J. Biol. Chem. 269:2574-2580(1994).
RN [6]
RP DISULFIDE BONDS.
RC TISSUE-Venom;
RX MEDLINE-95001845; PubMed-7918355;
RA Shon K.-J., Hasson A., Spira M.E., Cruz L.J., Gray W.R., Olivera B.M.;
RT "Delta-conotoxin GmVIA, a novel peptide from the venom of Conus
gloriamaris.";
RL Biochemistry 33:11420-11425(1994).
CC -1- FUNCTION: Delta-conotoxins bind to voltage-sensitive sodium
CC channel (VSSC) and inhibit the inactivation process. Binding of
CC this toxin is strongly calcium-dependent but not voltage-
CC dependent. The binding site is most likely on the extracellular
CC side of the sodium channel. Binds receptor sites on both mollusk
CC and rat central nervous system, but despite its high affinity
CC binding to rat sodium channel, it has no functional effect in vivo
CC and in vitro on it. Has also no effect on Gambusia fish. Is
CC important in mollusk for the paralysis of the prey. Upon injection
CC of the peptide, a subordinate lobster assumes an exaggerated
CC dominant posture (of a 'King-Kong' lobster!).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- MISCELLANEOUS: Veratridine increases the rate of dissociation in a
CC dose-dependent manner.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. DELTA-TYPE
CC FAMILY.
CC -----
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CC -----
CC EMBL; X53283; CAA37377.1; -.
DR PIR: A30103; A30103.
DR PIR: S12513; S12513.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
KW Neurotoxin; Toxin; Sodium channel inhibitor; Signal;
KW Cleavage on pair of basic residues.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 51
FT PEPTIDE 52 78 DELTA-CONOTOXIN TXVIA.
FT DISULFID 53 68
FT DISULFID 60 72
FT DISULFID 67 77
SQ SEQUENCE 78 AA; 8760 MW; C5CBFD462AD40A35 CRC64;

Query Match 35.8%; Score 135.5; DB 1; Length 78;
Best Local Similarity 40.3%; Pred. No. 3.5e-08;
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVIVAVLLTACQLITADDSRG-----TQKRALRSDFKLSMSTR-CRGTGKPC 53
DB 1 MKLTCMIVAVLFTAWTFATADDPNGLGNLFSNAHEMKNPASKLNKRWCKQSGEMC 60

QY 54 SRIAYNCCTGSC 65
DB 61 NLLDQNCDCGYC 72

RESULT 15
CXKL_CONTE STANDARD; PRT; 77 AA.
AC P18512;
DT 01-NOV-1990 (Rel. 16, Created)
DT 01-NOV-1990 (Rel. 16, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Conotoxin King-Kong 1 precursor (KK-1).

OS Conus textile (Cloth-of-gold cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_Taxid=6494;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-90214607; PubMed-1691090;
RA Woodward S.R., Cruz L.J., Olivera B.M., Hillyard D.R.;
RT "Constant and hypervariable regions in conotoxin propeptides.";
RL EMBO J. 9:1015-1020(1990).
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- MISCELLANEOUS: THE CYSTEINE PATTERN OF KK-0, KK-1, AND KK-2 ARE
CC IDENTICAL.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS.
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CC -----
CC EMBL; X53284; CAA37378.1; -.
DR PIR: S12514; S12514.
DR InterPro: IPR004214; Conotoxin.
DR Pfam: PF02950; Conotoxin; 1.
KW Neurotoxin; Toxin; Signal; Cleavage on pair of basic residues.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 49
FT PEPTIDE 52 77 CONOTOXIN KING-KONG 1.
FT DISULFID 52 67 BY SIMILARITY.
FT DISULFID 59 71 BY SIMILARITY.
FT DISULFID 66 76 BY SIMILARITY.
SQ SEQUENCE 77 AA; 8690 MW; A3EA4B5AC834E5A4 CRC64;

Query Match 35.7%; Score 135; DB 1; Length 77;
Best Local Similarity 39.4%; Pred. No. 3.9e-08;
Matches 28; Conservative 10; Mismatches 27; Indels 6; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLITADDSRG-----TQKRALRSDFKLSMSTRCKGTGKPCS 54
DB 1 MKLTCMIVAVLFTAWTFATADDSNGLNLFSAHEMKNPASKLNKRCIQDPCE 60

QY 55 RIAYNCCTGSC 65
DB 61 MIRHTCCVGC 71

Search completed: May 20, 2003, 15:38:59
Job time : 21.7083 secs

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GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:22:55 ; Search time 77.6562 Seconds
(Without alignments)
121.829 Million cell updates/sec

Title: US-09-910-082a-190
Perfect score: 378
Sequence: 1 MKLTCVIVAVLLLTACQLI.....PCSRIVNCCCTGSCRSKCG 71

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_101002:*

1:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1980.DAT:*
2:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1981.DAT:*
3:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1982.DAT:*
4:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1983.DAT:*
5:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1984.DAT:*
6:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1985.DAT:*
7:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1986.DAT:*
8:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1987.DAT:*
9:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1988.DAT:*
10:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1989.DAT:*
11:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1990.DAT:*
12:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1991.DAT:*
13:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1992.DAT:*
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15:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1994.DAT:*
16:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1995.DAT:*
17:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1996.DAT:*
18:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1997.DAT:*
19:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1998.DAT:*
20:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA1999.DAT:*
21:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA2000.DAT:*
22:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA2001.DAT:*
23:	/SIDS2/gcgcdata/geneseq/geneseqp-emb1/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	378	100.0	71	23	ABB96657
2	377	99.7	71	23	ABB96634
3	376	99.5	71	23	ABB96629
4	359	95.0	71	23	ABB96680
5	356	94.2	71	21	AAV87541
6	352	93.1	71	23	ABB96607
7	350	92.6	71	23	ABB96661
8	349	92.3	71	23	ABB96609
9	327	86.5	71	23	ABB96632
10	324	85.7	71	14	AAK38795

11	324	85.7	71	23	ABB96662	Omega-conopeptide
12	319	84.4	71	23	ABB96659	Omega-conopeptide
13	314	83.1	73	23	ABB96631	Omega-conopeptide
14	311	82.3	71	23	ABB96624	Omega-conopeptide
15	306	81.0	73	23	ABB96675	Omega-conopeptide
16	305	80.7	71	23	ABB96614	Omega-conopeptide
17	304	80.4	71	23	ABB96697	Omega-conopeptide
18	304	80.4	73	21	AAV43717	Amino acid sequenc
19	303	80.2	73	23	ABB96626	Omega-conopeptide
20	301	79.6	71	23	ABB96683	Omega-conopeptide
21	300	79.4	71	23	ABB96692	Omega-conopeptide
22	296	78.3	71	23	ABB96616	Omega-conopeptide
23	296	78.3	71	23	ABB96690	Omega-conopeptide
24	271.5	71.8	75	23	ABB96653	Omega-conopeptide
25	269.5	71.3	74	23	ABB96641	Omega-conopeptide
26	268.5	71.0	72	23	ABB96671	Omega-conopeptide
27	268.5	71.0	75	23	ABB96646	Omega-conopeptide
28	259.5	68.7	73	14	AAK38796	Conotoxin preprope
29	259.5	68.7	73	23	ABB96640	Omega-conopeptide
30	259.5	68.7	73	23	ABB96642	Omega-conopeptide
31	251.5	66.5	72	23	ABB96681	Omega-conopeptide
32	248.5	65.7	72	23	ABB96633	Omega-conopeptide
33	248.5	65.7	72	23	ABB96658	Omega-conopeptide
34	247.5	65.5	76	23	ABB96689	Omega-conopeptide
35	245.5	64.9	73	23	ABB96687	Omega-conopeptide
36	241.5	63.9	73	23	ABB96688	Omega-conopeptide
37	239	63.2	71	23	ABB96667	Omega-conopeptide
38	238.5	63.1	73	23	ABB96645	Omega-conopeptide
39	237.5	62.8	74	23	ABB96654	Omega-conopeptide
40	237.5	62.8	76	23	ABB96612	Omega-conopeptide
41	235.5	62.3	72	23	ABB96647	Omega-conopeptide
42	233.5	61.8	72	23	ABB96610	Omega-conopeptide
43	233.5	61.8	77	23	ABB96608	Omega-conopeptide
44	232	61.4	72	23	ABB96677	Omega-conopeptide
45	232	61.4	76	23	ABB96595	Omega-conopeptide

ALIGNMENTS

RESULT 1	
ABB96657	ABB96657 standard; Peptide; 71 AA.
XX	
AC	ABB96657;
XX	
DT	12-JUL-2002 (first entry)
XX	
DE	Omega-conopeptide M6.1 propeptide.
XX	
KW	Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW	neuroprotective; cerebroprotective; cardiovascular; antinflammatory;
KW	antimigraine; antidiabetic; tranquilliser; vulnereary; antipsychotic;
KW	anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW	neurological disorder; neurotoxic injury; hypoxia; anoxia; ischemia;
KW	stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW	drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW	migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW	psychosis; anxiety; schizophrenia.
XX	
OS	Conus magus.
XX	
PN	WO200207675-A2.
XX	
PD	31-JAN-2002.
XX	
PF	23-JUL-2001; 2001WO-US23041.
XX	
PR	21-JUL-2000; 2000US-219616P.
PR	05-FEB-2001; 2001US-265888P.
XX	
PA	(UTAH) UNIV UTAH RES FOUND.
PA	(COGN-) COGNETIX INC.

XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
XX WPI: 2002-257318/30.
DR N-PSDB; ABL98916.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX Claim 1(c); Page 52; 195pp; English.
PS
XX The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
XX Sequence 71 AA;
SQ
Query Match 100.0%; Score 378; DB 23; Length 71;
Best Local Similarity 100.0%; Pred. No. 4.3e-33;
Matches 71; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MKLTCVIVAVLLLTACQLITADDSRGTOKHRALRSDTKLSMSTRCKGTGKPCSRVAYNC 60
DB 1 MKLTCVIVAVLLLTACQLITADDSRGTOKHRALRSDTKLSMSTRCKGTGKPCSRVAYNC 60
QY 61 CTGSCRSKCG 71
DB 61 CTGSCRSKCG 71
DB 61 CTGSCRSKCG 71
RESULT 2
ABB96634
ID ABB96634 standard; Peptide: 71 AA.
XX
AC ABB96634;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Cn6.7 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus consors.
XX WO200207675-A2.
PN
XX 31-JAN-2002.
PD

XX 23-JUL-2001; 2001WO-US23041.
PF
XX 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
PR
XX
XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
XX WPI: 2002-257318/30.
DR N-PSDB; ABL98893.
XX
XX New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX Claim 1(c); Page 40; 195pp; English.
PS
XX The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
XX Sequence 71 AA;
SQ
Query Match 99.7%; Score 377; DB 23; Length 71;
Best Local Similarity 98.6%; Pred. No. 5.5e-33;
Matches 70; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
QY 1 MKLTCVIVAVLLLTACQLITADDSRGTOKHRALRSDTKLSMSTRCKGTGKPCSRVAYNC 60
DB 1 MKLTCVIVAVLLLTACQLITADDSRGTOKHRALRSDTKLSMSTRCKGTGKPCSRVAYNC 60
QY 61 CTGSCRSKCG 71
DB 61 CTGSCRSKCG 71
DB 61 CTGSCRSKCG 71
RESULT 3
ABB96629
ID ABB96629 standard; Peptide: 71 AA.
XX
AC ABB96629;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Cn6.2 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW

KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus consors.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98888.
XX
PS Claim 1(c); Page 38; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
Query Match 99.5%; Score 376; DB 23; Length 71;
Best Local Similarity 98.6%; Pred. No. 7e-33;
Matches 70; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
OY 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR IAYNC 60
Db 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR IAYNC 60
OY 61 CTGSCRS GCG 71
Db 61 CTGSCRS GCG 71
RESULT 4
ID ABB96680 standard; Peptide; 71 AA.
XX
AC ABB96680;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide S6.3 propeptide.

XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus striatus.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98939.
XX
PS New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX Claim 1(c); Page 62; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
Query Match 95.0%; Score 359; DB 23; Length 71;
Best Local Similarity 95.8%; Pred. No. 4.5e-31;
Matches 68; Conservative 0; Mismatches 3; Indels 0; Gaps 0;
OY 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR IAYNC 60
Db 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLRSDTKLSMSTRCKAAGKSCSR IAYNC 60
OY 61 CTGSCRS GCG 71
Db 61 CTGSCRS GCG 71
RESULT 5

AAV87541
ID AAV87541 standard; protein; 71 AA.
XX
AC AAV87541;
XX
DT 18-JUL-2000 (first entry)
XX
DE Conotoxin peptide #11 precursor.
XX
KW Conotoxin precursor; brocade cone shell; line cone shell; drug screening;
KW neuronal inhibitor; muscle inhibitor; analgesic.
XX
OS Conus sp.
XX
FH Key Location/Qualifiers
FT Misc-difference 6 /note= "Encoded by ATG"
XX
PN CN1237584-A.
XX
PD 08-DEC-1999.
XX
PF 30-APR-1999; 99CN-0106070.
XX
PR 30-APR-1999; 99CN-0106070.
XX
PA (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.
XX
PI Lu B, Huang P;
XX
DR WPI; 2000-351193/31.
DR N-PSDB; AAA10463.
XX
PT Conotoxin peptide from brocade cone shells useful as analgesic -
XX
PS Claim 1A; Page 5-6; 20pp; Chinese.
XX
XX The invention relates to 14 novel mature conotoxin peptides from marine
CC snails (Conus species); conotoxin precursor proteins; and cDNAs
CC encoding the conotoxin precursors. The mature peptide sequences were
CC discovered by obtaining conotoxin cDNA sequences from mRNA from the
CC brocade cone shell (Conus textile) or the line cone shell (Conus
CC striatus). The cDNA sequences were used to determine the conotoxin
CC precursor protein sequences, and the sequences of the mature conotoxin
CC peptides were inferred from the precursor sequences. The mature
CC conotoxin peptides can be obtained via chemical synthesis or by in vitro
CC gene expression. Conotoxins inhibit the function of neurons and muscle
CC cells. Certain conotoxins interfere with synaptic transmission, while
CC others act on muscle or at the neuromuscular junction. The 14 novel
CC conotoxins have unique receptor specificity and affinity, so can be
CC used as screening tools to identify new drugs. Conotoxin #11 (AAV87540)
CC may be used for pain relief. Sequences AAV87421, AAV87523, AAV87525,
CC AAV87527, AAV87529, AAV87531, AAV87533, AAV87535, AAV87537, AAV87539,
CC AAV87541, AAV87543, AAV87545 and AAV87547 represent the precursors of
CC conotoxins #1-#14, respectively.
XX
SQ Sequence 71 AA;
Query Match 94.2%; Score 356; DB 21; Length 71;
Best Local Similarity 94.4%; Pred. No. 9.5e-31;
Matches 67; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRRIAYNC 60
DB 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRRIAYNC 60

OY 61 CTGSCRSKCG 71
DB 61 CTGSCRSKCG 71

RESULT 6
ABB96607

ID ABB96607 standard; Peptide; 71 AA.
XX
AC ABB96607;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Ay6.1 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus aurisiacus.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
PA (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98867.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
PS Claim 1(c); Page 28; 195pp; English.
XX
XX The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96597 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
Query Match 93.1%; Score 352; DB 23; Length 71;
Best Local Similarity 93.0%; Pred. No. 2.5e-30;
Matches 66; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRRIAYNC 60
DB 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRRIAYNC 60

OY 61 CTGSCRSKCG 71
| | | | | | | | | |
Db 61 CTGSCRSKCG 71

RESULT 7

ABB96661

ID ABB96661 standard; Peptide; 71 AA.

AC ABB96661;

DT 12-JUL-2002 (first entry)

DE Omega-conopeptide Mn6.1 propeptide.

KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
migraine; inflammation; cardiovascular disorder; psychiatric disorder;
psychosis; anxiety; schizophrenia.

OS Conus monachus.

PN WO200207675-A2.

PD 31-JAN-2002.

PE 23-JUL-2001; 2001WO-US23041.

PR 21-JUL-2000; 2000US-219616P.

PR 05-FEB-2001; 2001US-265888P.

XX (UTAH) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

PI Jacobsen R, Jones RM, Cartier GE;

DR WPI; 2002-257318/30.

DR N-PSDB; ABL98920.

PT New omega-conopeptides useful for treating disorders associated with
voltage gated ion channels e.g. pain, inflammation, neurological or
cardiovascular disorders -

PS Claim 1(c); Page 53; 195pp; English.

CC The invention relates to isolated omega-conopeptides, nucleic acid
sequences encoding them, and propeptide sequences. The activity of
the peptides of the invention may be described as, analgesic,
anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
cardiovascular, antiinflammatory, antimigraine, antidiabetic,
tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
Peptides of the invention act by modulating the activity of voltage gated
ion channels. They may be used for treating or preventing disorders
associated with voltage gated ion channels such as neurological
disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
associated with conditions of hypoxia, anoxia, ischaemia, stroke,
cerebrovascular accident, brain or spinal chord trauma, drowning,
suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
migraine; inflammation or cardiovascular disorders. They may also be used
for treating psychiatric disorders e.g. psychosis, anxiety or
schizophrenia. The analgesic agents of the invention show diminished side
effects and toxicity, and are non-addictive. The sequences given in
records ABB96595-ABB96697 represent omega-conopeptide propeptide
sequences.

SQ Sequence 71 AA;

Query Match 92.6%; Score 350; DB 23; Length 71;
Best Local Similarity 94.4%; Pred. No. 4.1e-30;
Matches 67; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLITACQLITADDSRGTKHRAIRSDTKLSMSTRCKGTGKPSRIAYNC 60

DB 1 MKLTSVIVAVLLITACQLITADDSRGTKHRAIRSDTKLSISTRCKSTGKSCSRIAYNC 60

OY 61 CTGSCRSKCG 71

DB 61 CTGSCRSKCG 71

RESULT 8

ABB96609

ID ABB96609 standard; Peptide; 71 AA.

AC ABB96609;

DT 12-JUL-2002 (first entry)

DE Omega-conopeptide Ay6.3 propeptide.

KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
migraine; inflammation; cardiovascular disorder; psychiatric disorder;
psychosis; anxiety; schizophrenia.

OS Conus aurisiacus.

PN WO200207675-A2.

PD 31-JAN-2002.

PE 23-JUL-2001; 2001WO-US23041.

PR 21-JUL-2000; 2000US-219616P.

PR 05-FEB-2001; 2001US-265888P.

XX (UTAH) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

PI Jacobsen R, Jones RM, Cartier GE;

DR WPI; 2002-257318/30.

DR N-PSDB; ABL98869.

PT New omega-conopeptides useful for treating disorders associated with
voltage gated ion channels e.g. pain, inflammation, neurological or
cardiovascular disorders -

PS Claim 1(c); Page 29; 195pp; English.

CC The invention relates to isolated omega-conopeptides, nucleic acid
sequences encoding them, and propeptide sequences. The activity of
the peptides of the invention may be described as, analgesic,
anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
cardiovascular, antiinflammatory, antimigraine, antidiabetic,
tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
Peptides of the invention act by modulating the activity of voltage gated
ion channels. They may be used for treating or preventing disorders
associated with voltage gated ion channels such as neurological
disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
associated with conditions of hypoxia, anoxia, ischaemia, stroke,
cerebrovascular accident, brain or spinal chord trauma, drowning,
suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.

CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.

XX Sequence 71 AA;

Query Match 92.3%; Score 349; DB 23; Length 71;
Best Local Similarity 93.0%; Pred. No. 5.3e-30;
Matches 66; Conservative 1; Mismatches 4; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRAYNC 60
DB 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKAKGKPCSRAYNC 60

OY 61 CTGSCRSKCG 71
DB 61 CTGSCRSKCG 71

RESULT 9
ABB96632
ID ABB96632 standard; Peptide: 71 AA.
AC ABB96632;
XX 12-JUL-2002 (first entry)
DT
DE Omega-conopeptide Cn6.5 propeptide.

XX Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.

OS Conus consors.

XX WO200207675-A2.

XX 31-JAN-2002.

XX 23-JUL-2001; 2001WO-US23041.

XX 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.

XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.

XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;

XX WPI; 2002-257318/30.
DR N-PSDB; ABL98891.

XX New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -

PS Claim 1(c); Page 39; 195pp; English.

XX The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,

CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.

XX Sequence 71 AA;

Query Match 86.5%; Score 327; DB 23; Length 71;
Best Local Similarity 85.9%; Pred. No. 1.2e-27;
Matches 61; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRAYNC 60
DB 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGASCHRYSYC 60

OY 61 CTGSCRSKCG 71
DB 61 CTGSCNRKCG 71

RESULT 10
AAR38795
ID AAR38795 standard; peptide: 71 AA.
AC AAR38795;
XX 22-FEB-1994 (first entry)
DT
DE Conotoxin prepropeptide MWIIB.

XX Calcium channel; four loop; toxin; MWIIB; Conus magus; GVIA; neurone;
KW C. geographus; conotoxin; presynaptic; specificity; calcium target;
KW cysteine; omega; framework; template domain.

XX Conus magus.

XX Key Location/Qualifiers
FH Region 46.70
FT /note= "Mature omega-toxin"

XX US5231011-A.

XX 27-JUL-1993.

XX 18-APR-1991; 91US-0689693.

XX 18-APR-1991; 91US-0689693.

XX (UTAH) UNIV UTAH.

XX Hillyard DR, Olivera BM;

XX WPI; 1993-249725/31.

XX Formation of cysteine-rich peptide of specified di:sulphide bonding -
PT involves forming pre:pro-peptide with N-terminal excised region which
PT acts as templates for directing di:sulphide bond formation in
PT cysteine-rich peptide

PS Example 1; Column 8; 15pp; English.

XX The sequences given in AAR38795-96 represent two examples of calcium
CC channel four loop toxins. They are MWIIB from Conus magus and GVIA

CC from C. geographus. These conotoxins target presynaptic calcium
CC channels and have largely overlapping specificities for different
CC calcium targets in neuronal tissue preparations. These peptides
CC form a four loop folded toxin molecule with a specific arrangement of
CC cysteines referred to as the omega pattern. The cysteine framework
CC of these two peptides differs only in the exact amino acid spacing
CC of the two carboxy terminal inter-Cys domains. Beyond the similarity
CC of the framework the two peptides are remarkably divergent. Only nine
CC of the 21 non-Cys amino acids of the omega-GVIA are conserved in the
CC omega-MVIIA. MVIIB and GVIA template domains are each 45 amino acids
CC in length. They also show a >90% conservation of amino acid sequence
CC with only 4 positions of amino acid non-identity. These two sequences
CC illustrate the existence of two highly conserved template domains
CC associated with two structurally dissimilar toxins.

XX SQ Sequence 71 AA;

Query Match 85.7%; Score 324; DB 14; Length 71;
Best Local Similarity 85.9%; Pred. No. 2.4e-27;
Matches 61; Conservative 2; Mismatches 8; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRIRAYNC 60
DB 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGKGASCHRTSYDC. 60

OY 61 CTGSCRSKCG 71
DB 61 CTGSCNRGDCG 71

RESULT 11
ABB96662
ID ABB96662 standard; Peptide; 71 AA.

XX AC ABB96662;

DT 12-JUL-2002 (first entry)

DE Omega-conopeptide Mn6.2 propeptide.

KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychostis; anxiety; schizophrenia.

OS Conus monachus.

PN WO200207675-A2.

PD 31-JAN-2002.

PF 23-JUL-2001; 2001WO-US23041.

PR 21-JUL-2000; 2000US-219616P.

PR 05-FEB-2001; 2001US-265888P.

PA (UTAH) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

PI Jacobsen R, Jones RM, Cartier GE;

DR WPI; 2002-257318/30.

DR N-PSDB; ABL98921.

XX New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -

XX PS Claim 1(c); Page 54; 195pp; English.

XX CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychostis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.

XX SQ Sequence 71 AA;

Query Match 85.7%; Score 324; DB 23; Length 71;
Best Local Similarity 87.3%; Pred. No. 2.4e-27;
Matches 62; Conservative 0; Mismatches 9; Indels 0; Gaps 0;

OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSRIRAYNC 60
DB 1 MKLTSVIVAVLLLTACQLITADDSRGTKHRLRSDTNLSMSTRCKGKSSSRTMYNC 60

OY 61 CTGSCRSKCG 71
DB 61 CTGSCNRGKCG 71

RESULT 12
ABB96659
ID ABB96659 standard; Peptide; 71 AA.

XX AC ABB96659;

DT 12-JUL-2002 (first entry)

DE Omega-conopeptide w-MVIIB propeptide.

KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychostis; anxiety; schizophrenia.

OS Conus magus.

PN WO200207675-A2.

PD 31-JAN-2002.

PF 23-JUL-2001; 2001WO-US23041.

PR 21-JUL-2000; 2000US-219616P.

PR 05-FEB-2001; 2001US-265888P.

PA (UTAH) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98918.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
PS Claim 1(c); Page 52; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
Query Match. 84.4%; Score 319; DB 23; Length 71;
Best Local Similarity 85.9%; Pred. No. 8.2e-27;
Matches 61; Conservative 2; Mismatches 8; Indels 0; Gaps 0;
QY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR IAYNC 60
Db 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGKGASCHRSYDC 60
QY 61 CTGSCRSKGC 71
Db 61 CTGSCNRGKFG 71
RESULT 13
ABB96631
ID ABB96631 standard; Peptide: 73 AA.
XX
AC ABB96631;
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Cn6.4 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus consors.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.

XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
PA (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98890.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
PS Claim 1(c); Page 39; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 73 AA;
Query Match. 83.1%; Score 314; DB 23; Length 73;
Best Local Similarity 82.2%; Pred. No. 2.9e-26;
Matches 60; Conservative 5; Mismatches 6; Indels 2; Gaps 1;
QY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR IAYNC 60
Db 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGKGASCTRLMYDC 60
QY 61 CTGSCRS--GKGC 71
Db 61 CHGSCSSSKGRGC 73
RESULT 14
ABB96624
ID ABB96624 standard; Peptide: 71 AA.
XX
AC ABB96624;
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Cr6.1 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.

XX OS Conus circumcissus.
XX PN WO200207675-A2.
XX PD 31-JAN-2002.
XX PF 23-JUL-2001; 2001WO-US23041.
XX PR 21-JUL-2000; 2000US-219616P.
XX PR 05-FEB-2001; 2001US-265888P.
XX PA (UTAH) UNIV UTAH RES FOUND.
XX PA (COGN-) COGNETIX INC.
XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
XX PI Jacobsen R, Jones RM, Cartier GE;
XX DR WPI; 2002-257318/30.
XX DR N-PSDB; ABL98883.
XX PT New omega-conopeptides useful for treating disorders associated with
XX PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX PT cardiovascular disorders -
XX PS Claim 1(c); Page 36; 195pp; English.
XX CC The invention relates to isolated omega-conopeptides, nucleic acid
XX CC sequences encoding them, and propeptide sequences. The activity of
XX CC the peptides of the invention may be described as, analgesic,
XX CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
XX CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
XX CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
XX CC Peptides of the invention act by modulating the activity of voltage gated
XX CC ion channels. They may be used for treating or preventing disorders
XX CC associated with voltage gated ion channels such as neurological
XX CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
XX CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
XX CC cerebrovascular accident, brain or spinal chord trauma, drowning,
XX CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
XX CC migraine; inflammation or cardiovascular disorders. They may also be used
XX CC for treating psychiatric disorders e.g. psychosis, anxiety or
XX CC schizophrenia. The analgesic agents of the invention show diminished side
XX CC effects and toxicity, and are non-addictive. The sequences given in
XX CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
XX CC sequences.
XX SQ Sequence 71 AA;
XX
XX Query Match 82.3%; Score 311; DB 23; Length 71;
XX Best Local Similarity 80.3%; Pred. No. 5.8e-26;
XX Matches 57; Conservative 5; Mismatches 9; Indels 0; Gaps 0;
OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR IAYNC 60
DB 1 MKLTCVIVAVVLLLTQQLITADDSRGTKQEHRLRSDTKLPMSTRCKGKGASCKRTMYNC 60
OY 61 CTGSCRSKCG 71
DB 61 CSGSCSNGRCG 71
RESULT 15
ABB96675
ID ABB96675 standard; Peptide; 73 AA.
XX AC ABB96675;
XX DT 12-JUL-2002 (first entry)
XX DE Omega-conopeptide Sm6.1 propeptide.
XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;

KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX OS Conus stercusmuscarum.
XX PN WO200207675-A2.
XX PD 31-JAN-2002.
XX PF 23-JUL-2001; 2001WO-US23041.
XX PR 21-JUL-2000; 2000US-219616P.
XX PR 05-FEB-2001; 2001US-265888P.
XX PA (UTAH) UNIV UTAH RES FOUND.
XX PA (COGN-) COGNETIX INC.
XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
XX PI Jacobsen R, Jones RM, Cartier GE;
XX DR WPI; 2002-257318/30.
XX DR N-PSDB; ABL98934.
XX PT New omega-conopeptides useful for treating disorders associated with
XX PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX PT cardiovascular disorders -
XX PS Claim 1(c); Page 60; 195pp; English.
XX CC The invention relates to isolated omega-conopeptides, nucleic acid
XX CC sequences encoding them, and propeptide sequences. The activity of
XX CC the peptides of the invention may be described as, analgesic,
XX CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
XX CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
XX CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
XX CC Peptides of the invention act by modulating the activity of voltage gated
XX CC ion channels. They may be used for treating or preventing disorders
XX CC associated with voltage gated ion channels such as neurological
XX CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
XX CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
XX CC cerebrovascular accident, brain or spinal chord trauma, drowning,
XX CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
XX CC migraine; inflammation or cardiovascular disorders. They may also be used
XX CC for treating psychiatric disorders e.g. psychosis, anxiety or
XX CC schizophrenia. The analgesic agents of the invention show diminished side
XX CC effects and toxicity, and are non-addictive. The sequences given in
XX CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
XX CC sequences.
XX SQ Sequence 73 AA;
XX
XX Query Match 81.0%; Score 306; DB 23; Length 73;
XX Best Local Similarity 80.8%; Pred. No. 2.1e-25;
XX Matches 59; Conservative 5; Mismatches 7; Indels 2; Gaps 1;
OY 1 MKLTCVIVAVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKGTGKPCSR IAYNC 60
DB 1 MKLTCVIVAVVLLLTACQLITADDSRGTKHRLRSDTKLSMSTRCKSKGAKCSRLMYDC 60
OY 61 CTGSCR--SGKCG 71
DB 61 CSGSCSGYTGRCG 73

Search completed: May 20, 2003, 15:38:23
Job time : 78.6562 secs

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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:36:46 ; Search time 28.1042 Seconds
(without alignments)
74.332 Million cell updates/sec

Title: US-09-910-082A-190
Perfect score: 378
Sequence: 1 MKLTCVYIVAVLLLTACQLI.....PCSR1AYNCTGSGRSGKCG 71

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
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2: /cgn2_6/ptodata/1/1aa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/1aa/6A_COMB.pep:*
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5: /cgn2_6/ptodata/1/1aa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/1aa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	330	87.3	71	1	US-07-689-693B-1 Sequence 1, Appl1
2	259.5	68.7	73	1	US-07-689-693B-3 Sequence 3, Appl1
3	259.5	68.7	73	1	US-08-624-123-12 Sequence 12, Appl1
4	259.5	68.7	73	5	PCT-US96-05262-13 Sequence 13, Appl1
5	219	57.9	45	1	US-07-689-693B-19 Sequence 19, Appl1
6	198	52.4	45	1	US-07-689-693B-20 Sequence 20, Appl1
7	135.5	35.8	78	1	US-07-689-693B-5 Sequence 5, Appl1
8	135.5	35.8	78	1	US-08-624-123-13 Sequence 13, Appl1
9	135.5	35.8	78	2	US-08-716-308-2 Sequence 2, Appl1
10	135.5	35.8	78	2	US-08-716-308-16 Sequence 16, Appl1
11	135.5	35.8	78	5	PCT-US96-05262-14 Sequence 14, Appl1
12	135	35.7	77	2	US-08-716-308-17 Sequence 17, Appl1
13	134	35.4	77	1	US-07-689-693B-7 Sequence 7, Appl1
14	128	33.9	26	1	US-08-049-794-11 Sequence 11, Appl1
15	128	33.9	26	1	US-08-496-847-11 Sequence 11, Appl1
16	128	33.9	26	2	US-08-675-354-11 Sequence 11, Appl1
17	128	33.9	26	2	US-08-742-774-11 Sequence 11, Appl1
18	128	33.9	26	2	US-08-965-918-11 Sequence 11, Appl1
19	128	33.9	26	2	US-09-138-439-11 Sequence 11, Appl1
20	128	33.9	26	3	US-08-613-400A-11 Sequence 11, Appl1
21	128	33.9	26	3	US-09-298-017-11 Sequence 11, Appl1
22	128	33.9	26	4	US-09-392-979A-11 Sequence 11, Appl1
23	128	33.9	77	2	US-08-716-308-18 Sequence 18, Appl1
24	127	33.6	26	1	US-07-789-913-11 Sequence 11, Appl1
25	127	33.6	27	1	US-07-789-913-14 Sequence 14, Appl1
26	126	33.3	25	1	US-08-496-847-35 Sequence 35, Appl1
27	126	33.3	25	2	US-08-965-918-35 Sequence 35, Appl1

28	126	33.3	25	3	US-08-613-400A-35 Sequence 35, Appl1
29	126	33.3	81	1	US-08-624-123-10 Sequence 10, Appl1
30	126	33.3	81	5	PCT-US96-05262-5 Sequence 5, Appl1
31	123	32.5	25	1	US-08-049-794-12 Sequence 12, Appl1
32	123	32.5	25	1	US-08-496-847-12 Sequence 12, Appl1
33	123	32.5	25	2	US-08-742-774-12 Sequence 12, Appl1
34	123	32.5	25	2	US-08-675-354-12 Sequence 12, Appl1
35	123	32.5	25	2	US-08-965-918-12 Sequence 12, Appl1
36	123	32.5	25	2	US-09-138-439-12 Sequence 12, Appl1
37	123	32.5	25	3	US-08-613-400A-12 Sequence 12, Appl1
38	123	32.5	25	3	US-09-298-017-12 Sequence 12, Appl1
39	123	32.5	25	4	US-09-392-979A-12 Sequence 12, Appl1
40	123	32.5	27	1	US-08-049-794-14 Sequence 14, Appl1
41	123	32.5	27	1	US-08-496-847-14 Sequence 14, Appl1
42	123	32.5	27	2	US-08-742-774-14 Sequence 14, Appl1
43	123	32.5	27	2	US-08-675-354-14 Sequence 14, Appl1
44	123	32.5	27	2	US-08-965-918-14 Sequence 14, Appl1
45	123	32.5	27	2	US-09-138-439-14 Sequence 14, Appl1

ALIGNMENTS

RESULT 1
US-07-689-693B-1
; Sequence 1, Application US/07689693B
; Patent No. 5231011
; GENERAL INFORMATION:
; APPLICANT: David Hillyard
; APPLICANT: Baldomero M. Olivera
; TITLE OF INVENTION: Segregated Folding Determinants
; TITLE OF INVENTION: for Small Disulfide-Rich Peptides
; NUMBER OF SEQUENCES: 25
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Thorpe, No. 5231011th & Western
; STREET: 9035 South 700 East, Suite 200
; CITY: Sandy
; STATE: Utah
; COUNTRY: USA
; ZIP: 84070
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage
; COMPUTER: Compaq LTE/286
; OPERATING SYSTEM: DOS 4.01
; SOFTWARE: Word Perfect 5.1
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/689, 693B
; FILING DATE: 19910418
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: none
; FILING DATE: na
; ATTORNEY/AGENT INFORMATION:
; NAME: Western, M. Wayne
; REGISTRATION NUMBER: 22,788
; REFERENCE/DOCKET NUMBER: 9925
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (801) 566-6633
; TELEFAX: (801) 566-0750
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 71 amino acids
; TYPE: AMINO ACID
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; FEATURE:
; NAME/KEY: Prepropeptide sequence for four-loop
; NAME/KEY: MW1B Omega conotoxin from Conus magus.
; IDENTIFICATION METHOD: Libraries were created
; IDENTIFICATION METHOD: using oligo-dt primed pUC13 vector
US-07-689-693B-1
Query Match 87.3% Score 330; DB 1; Length 71;

APPLICANT: Hillyard, David R.
TITLE OF INVENTION: Conotoxin Peptides
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: Venable, Baetjer, Howard & Civiletti, LLP
STREET: 1201 New York Avenue, N.W., Suite 1000
CITY: Washington
STATE: DC
COUNTRY: U.S.A.
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US96/05262
FILING DATE: 17-Apr-1996
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/423,561
FILING DATE: 17-Apr-1995
ATTORNEY/AGENT INFORMATION:
NAME: Saxe, Stephen A.
REGISTRATION NUMBER: 38,609
REFERENCE/DOCKET NUMBER: 24260-107674
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-962-4848
TELEFAX: 202-962-8300
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
LENGTH: 73 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
PCT-US96-05262-13

Query Match 68.7%; Score 259.5; DB 5; Length 73;
Best Local Similarity 80.0%; Pred. No. 2.5e-21;
Matches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLITADDSRGTKQKRALRSDTKLSMSTRCKGTGKPCSR1AYNC 60
DB 1 MKLTCVIVAVLLTACQLITADDSRGTKQKRALRSDTKLSMSTRCKSPSSCSPTSYNC 60

QY 61 CTGSC 65
DB 61 CR-SC 64

RESULT 5
US-07-689-693B-19
Sequence 19, Application US/07689693B
Patent No. 5231011
GENERAL INFORMATION:
APPLICANT: David Hillyard
APPLICANT: Baldomero M. Olivera
TITLE OF INVENTION: Segregated Folding Determinants
TITLE OF INVENTION: for Small Disulfide-Rich Peptides
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: Thorpe, No. 5231011th & Western
STREET: 9035 South 700 East, Suite 200
CITY: Sandy
STATE: Utah
COUNTRY: USA
ZIP: 84070
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage
COMPUTER: Compaq LTE/286
OPERATING SYSTEM: DOS 4.01

SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/689,693B
FILING DATE: 19910418
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: none
FILING DATE: na
ATTORNEY/AGENT INFORMATION:
NAME: Western, M. Wayne
REGISTRATION NUMBER: 22,788
REFERENCE/DOCKET NUMBER: 9925
TELECOMMUNICATION INFORMATION:
TELEPHONE: (801) 566-6633
TELEFAX: (801) 566-0750
INFORMATION FOR SEQ ID NO: 19:
SEQUENCE CHARACTERISTICS:
LENGTH: 45 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: peptide
FEATURE:
NAME/KEY: Signal/Pro sequence for synthesis of
NAME/KEY: four-loop MYIIB Omega conotoxin
IDENTIFICATION METHOD: Libraries were created
IDENTIFICATION METHOD: using oligo-dT primed pUC13 vector
US-07-689-693B-19

Query Match 57.9%; Score 219; DB 1; Length 45;
Best Local Similarity 100.0%; Pred. No. 3.4e-17;
Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVLLTACQLITADDSRGTKQKRALRSDTKLSMSTR 45
DB 1 MKLTCVIVAVLLTACQLITADDSRGTKQKRALRSDTKLSMSTR 45

RESULT 6
US-07-689-693B-20
Sequence 20, Application US/07689693B
Patent No. 5231011
GENERAL INFORMATION:
APPLICANT: David Hillyard
APPLICANT: Baldomero M. Olivera
TITLE OF INVENTION: Segregated Folding Determinants
TITLE OF INVENTION: for Small Disulfide-Rich Peptides
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: Thorpe, No. 5231011th & Western
STREET: 9035 South 700 East, Suite 200
CITY: Sandy
STATE: Utah
COUNTRY: USA
ZIP: 84070
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage
COMPUTER: Compaq LTE/286
OPERATING SYSTEM: DOS 4.01
SOFTWARE: Word Perfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/689,693B
FILING DATE: 19910418
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: none
FILING DATE: na
ATTORNEY/AGENT INFORMATION:
NAME: Western, M. Wayne
REGISTRATION NUMBER: 22,788
REFERENCE/DOCKET NUMBER: 9925
TELECOMMUNICATION INFORMATION:
TELEPHONE: (801) 566-6633
TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 20:
SEQUENCE CHARACTERISTICS:
LENGTH: 45 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: peptide
FEATURE:
NAME/KEY: Signal/Pro sequence for synthesis of
IDENTIFICATION METHOD: Libraries were created
IDENTIFICATION METHOD: using oligo-dt primed pUC13 vector
US-07-689-693B-20

Query Match 52.4%; Score 198; DB 1; Length 45;
Best Local Similarity 91.1%; Pred. No. 6.2e-15;
Matches 41; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLSDTKLSMSTR 45
Db 1 MKLTCVIVAVLLLTACQLTADDSRGTKHRLSGSTELSLSTR 45

RESULT 7

US-07-689-693B-5
Sequence 5, Application US/07689693B
Patent No. 5231011

GENERAL INFORMATION:

APPLICANT: David Hillyard
APPLICANT: Baldomero M. Olivera
TITLE OF INVENTION: Segregated Folding Determinants
TITLE OF INVENTION: for Small Disulfide-Rich Peptides
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: Thorpe, No. 5231011th & Western
STREET: 9035 South 700 East, Suite 200
CITY: Sandy
STATE: Utah
COUNTRY: USA
ZIP: 84070

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage
COMPUTER: Compaq LTE/286
OPERATING SYSTEM: DOS 4.01
SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/07/689,693B
FILING DATE: 19910418

CLASSIFICATION: 530

PRIOR APPLICATION DATA:

APPLICATION NUMBER: none

FILING DATE: na

ATTORNEY/AGENT INFORMATION:

NAME: Western, M. Wayne

REGISTRATION NUMBER: 22,788

REFERENCE/DOCKET NUMBER: 9925

TELECOMMUNICATION INFORMATION:

TELEPHONE: (801) 566-6633

TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 5:

SEQUENCE CHARACTERISTICS:

LENGTH: 78 amino acids

TYPE: AMINO ACID

TOPOLOGY: linear

MOLECULE TYPE: peptide

FEATURE:

NAME/KEY: Prepropeptide sequence for four loop

IDENTIFICATION METHOD: Library was constructed

IDENTIFICATION METHOD: using polyA selected mRNA transcripts purified

IDENTIFICATION METHOD: from Conus textile venom duct tissue and cloned

IDENTIFICATION METHOD: into the Okyama-Berg oligo-dt primed plasmid

IDENTIFICATION METHOD: pSV7186.

US-07-689-693B-5

Query Match 35.8%; Score 135.5; DB 1; Length 78;
Best Local Similarity 40.3%; Pred. No. 5.8e-08;
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVIVAVLLLTACQLTADDSRG-----TQKHRLSDTKLSMSTR-CKGTGKPC 53
Db 1 MKLTCMIVAVLLTAWTFATADDPNGLGNSFSNAHMKNPASKLNKRCQSGEMC 60

QY 54 SRIAYNCCRGSC 65
Db 61 NLIDQNCDDGYC 72

RESULT 8

US-08-624-123-13
Sequence 13, Application US/08624123
Patent No. 5739276

GENERAL INFORMATION:

APPLICANT: Shon, Ki-Joon
APPLICANT: Grilley, Michelle M.
APPLICANT: Olivera, Baldomero M.
TITLE OF INVENTION: Conotoxin Peptides
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
ADDRESSEE: Venable, Baetjer, Howard & Civiletti
STREET: 1201 New York Avenue N.W.
CITY: Washington
STATE: DC
COUNTRY: US
ZIP: 20005

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/624,123
FILING DATE:

CLASSIFICATION: 530

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/319,554

FILING DATE: 07-OCT-1994

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/423,561

FILING DATE: 17-APR-1995

ATTORNEY/AGENT INFORMATION:

NAME: Ihnen, Jeffrey L.

REGISTRATION NUMBER: 28,957

REFERENCE/DOCKET NUMBER: 24260-107674-5

TELECOMMUNICATION INFORMATION:

TELEPHONE: 202-962-4810

TELEFAX: 202-962-8300

INFORMATION FOR SEQ ID NO: 13:

SEQUENCE CHARACTERISTICS:

LENGTH: 78 amino acids

TYPE: amino acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

HYPOTHETICAL: NO

US-08-624-123-13

Query Match 35.8%; Score 135.5; DB 1; Length 78;
Best Local Similarity 40.3%; Pred. No. 5.8e-08;
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVIVAVLLLTACQLTADDSRG-----TQKHRLSDTKLSMSTR-CKGTGKPC 53
Db 1 MKLTCMIVAVLLTAWTFATADDPNGLGNSFSNAHMKNPASKLNKRCQSGEMC 60

QY 54 SRIAYNCCRGSC 65
: : ||| | |

Db 61 NLLDQNCDDGYC 72

RESULT 9

US-08-716-308-2

; Sequence 2, Application US/08716308
; Patent No. 5885569

; GENERAL INFORMATION:

; APPLICANT: Windass, John D.

; TITLE OF INVENTION: Biological Insect Control Agent

; NUMBER OF SEQUENCES: 18

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: ZENECA Inc.

; STREET: 1800 Concord Pike

; CITY: Wilmington

; STATE: DE

; COUNTRY: USA

; ZIP: 19850

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patentln Release #1.0, Version #1.25

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/716,308

; FILING DATE: 24-SEP-1996

; CLASSIFICATION: 424

; PRIORITY APPLICATION DATA:

; APPLICATION NUMBER: PCT/GB95/00677

; FILING DATE: 27-MAR-1995

; PRIORITY APPLICATION DATA:

; APPLICATION NUMBER: GB 9405951.6

; FILING DATE: 25-MAR-1994

; ATTORNEY/AGENT INFORMATION:

; NAME: Hohenschultz, Liza D.

; REGISTRATION NUMBER: 33,712

; REFERENCE/DOCKET NUMBER: PPD40027X/UST

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: (302) 886-1699

; INFORMATION FOR SEQ ID NO: 2:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 78 amino acids

; TYPE: amino acid

; TOPOLOGY: linear

; MOLECULE TYPE: peptide

US-08-716-308-2

Query Match 35.8%; Score 135.5; DB 2; Length 78;
Best Local Similarity 40.3%; Pred. No. 5.8e-08;
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;QY 1 MKLTCVIVAVLLTACQLTADDSRG-----TQKRALRSDTKLSMSTR-CKGTGKPC 53
|||||:||||| ||| ||||| :|::: :| || :|:|

Db 1 MKLTCMIVAVLEFLTAWTFATADDPNRGLGNLFSNAHHEMKNPEASKLNKRWCKQSGEMC 60

QY 54 SRIAYNCCTGSC 65
: : ||| | |

Db 61 NLLDQNCDDGYC 72

RESULT 10

US-08-716-308-16

; Sequence 16, Application US/08716308

; Patent No. 5885569

; GENERAL INFORMATION:

; APPLICANT: Windass, John D.

; TITLE OF INVENTION: Biological Insect Control Agent

; NUMBER OF SEQUENCES: 18

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: ZENECA Inc.

; STREET: 1800 Concord Pike

; CITY: Wilmington

; STATE: DE

COUNTRY: USA

ZIP: 19850

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patentln Release #1.0, Version #1.25

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/716,308

; FILING DATE: 24-SEP-1996

; CLASSIFICATION: 424

; PRIORITY APPLICATION DATA:

; APPLICATION NUMBER: PCT/GB95/00677

; FILING DATE: 27-MAR-1995

; PRIORITY APPLICATION DATA:

; APPLICATION NUMBER: GB 9405951.6

; FILING DATE: 25-MAR-1994

; ATTORNEY/AGENT INFORMATION:

; NAME: Hohenschultz, Liza D.

; REGISTRATION NUMBER: 33,712

; REFERENCE/DOCKET NUMBER: PPD40027X/UST

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: (302) 886-1699

; INFORMATION FOR SEQ ID NO: 16:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 78 amino acids

; TYPE: amino acid

; TOPOLOGY: linear

; MOLECULE TYPE: peptide

US-08-716-308-16

Query Match 35.8%; Score 135.5; DB 2; Length 78;
Best Local Similarity 40.3%; Pred. No. 5.8e-08;
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;QY 1 MKLTCVIVAVLLTACQLTADDSRG-----TQKRALRSDTKLSMSTR-CKGTGKPC 53
|||||:||||| ||| ||||| :|::: :| || :|:|

Db 1 MKLTCMIVAVLEFLTAWTFATADDPNRGLGNLFSNAHHEMKNPEASKLNKRWCKQSGEMC 60

QY 54 SRIAYNCCTGSC 65
: : ||| | |

Db 61 NLLDQNCDDGYC 72

RESULT 11

PCT-US96-05262-14

; Sequence 14, Application PC/TUS9605262

; GENERAL INFORMATION:

; APPLICANT: Shon, Ki-Joon

; APPLICANT: Grilley, Michelle M.

; APPLICANT: Olivera, Baldomero M.

; APPLICANT: Yoshikami, Doju

; APPLICANT: Marsh, Maren

; APPLICANT: Cruz, Lourdes J.

; APPLICANT: Hillyard, David R.

; TITLE OF INVENTION: Conotoxin Peptides

; NUMBER OF SEQUENCES: 14

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Venable, Baetjer, Howard & Civiletti, LLP

; STREET: 1201 New York Avenue, N.W., Suite 1000

; CITY: Washington

; STATE: DC

; COUNTRY: U.S.A.

; ZIP: 20005

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patentln Release #1.0, Version #1.30

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: PCT/US96/05262

; FILING DATE: 17-APR-1996

; CLASSIFICATION:

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/423,561
FILING DATE: 17-APR-1995
ATTORNEY/AGENT INFORMATION:
NAME: Saxe, Stephen A.
REGISTRATION NUMBER: 38,609
REFERENCE/DOCKET NUMBER: 24260-107674
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-962-4848
TELEFAX: 202-962-8300
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 78 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
PCT-US96-05262-14

Query Match 35.8%; Score 135.5; DB 5; Length 78;
Best Local Similarity 40.3%; Pred. No. 5.8e-08;
Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVIVAVLLLTACQLITADDSRG-----TQKRALRSDTKLSMSTR-CKGTGKPC 53
|||||:||||| ||| ||||| :|::: |||:|:|
Db 1 MKLTCMIVAVLFLTAWTFATADDPKNGLNLSNAHHEKMPKASKLNKRWCKQSGEMC 60
QY 54 SRIAYNCCGTGSC 65
: : ||||| |
Db 61 NLLDONCCDGYC 72

RESULT 12
US-08-716-308-17
Sequence 17, Application US/08716308
Patent No. 5885569
GENERAL INFORMATION:
APPLICANT: Windass, John D.
TITLE OF INVENTION: Biological Insect Control Agent
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
ADDRESSEE: ZENECA Inc.
STREET: 1800 Concord Pike
CITY: Wilmington
STATE: DE
COUNTRY: USA
ZIP: 19850
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/716,308
FILING DATE: 24-SEP-1996
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/GB95/00677
FILING DATE: 27-MAR-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9405951.6
FILING DATE: 25-MAR-1994
ATTORNEY/AGENT INFORMATION:
NAME: Hohenschutz, Liza D.
REGISTRATION NUMBER: 33,712
REFERENCE/DOCKET NUMBER: PPD40027X/UST
TELECOMMUNICATION INFORMATION:
TELEPHONE: (302) 886-1699
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 77 amino acids
TYPE: amino acid

TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-716-308-17

Query Match 35.7%; Score 135; DB 2; Length 77;
Best Local Similarity 39.4%; Pred. No. 6.5e-08;
Matches 28; Conservative 10; Mismatches 27; Indels 6; Gaps 1;

QY 1 MKLTCVIVAVLLLTACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPCS 54
|||||:||||| ||| ||||| :|::: |||:|:|
Db 1 MKLTCMIVAVLFLTAWTFATADDSNGLENLFSKAHHEKMPKASKLNKRCIEQFDPC 60
QY 55 RIAYNCCGTGSC 65
| : ||||| |
Db 61 MIRHTCCVGC 71

RESULT 13
US-07-689-693B-7
Sequence 7, Application US/07689693B
Patent No. 5231011

GENERAL INFORMATION:
APPLICANT: David Hillyard
APPLICANT: Baldomero M. Olivera
TITLE OF INVENTION: Segregated Folding Determinants
TITLE OF INVENTION: for Small Disulfide-Rich Peptides
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: Thorpe, No. 5231011th & Western
STREET: 9035 South 700 East, Suite 200
CITY: Sandy
STATE: Utah
COUNTRY: USA
ZIP: 84070

COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage
COMPUTER: Compaq LTE/286
OPERATING SYSTEM: DOS 4.01
SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/689,693B
FILING DATE: 19910418
CLASSIFICATION: 530

PRIOR APPLICATION DATA:
APPLICATION NUMBER: none
FILING DATE: na
ATTORNEY/AGENT INFORMATION:
NAME: Western, M. Wayne
REGISTRATION NUMBER: 22,788
REFERENCE/DOCKET NUMBER: 9925

TELECOMMUNICATION INFORMATION:
TELEPHONE: (801) 566-6633
TELEFAX: (801) 566-0750
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 77 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: peptide

FEATURE:
NAME/KEY: Prepropeptide sequence for four loop

IDENTIFICATION METHOD: Library was constructed
IDENTIFICATION METHOD: using polyA selected mRNA transcripts purified
IDENTIFICATION METHOD: from Conus textile venom duct tissue and cloned
IDENTIFICATION METHOD: into the Okyama-Berg oligo-dT primed plasmid
IDENTIFICATION METHOD: PSV7186.

US-07-689-693B-7

Query Match 35.4%; Score 134; DB 1; Length 77;
Best Local Similarity 39.4%; Pred. No. 8.4e-08;
Matches 28; Conservative 10; Mismatches 27; Indels 6; Gaps 1;

```

QY      1 MKLTGVIVAVALLLPACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPCS 54
      |||||::||| | | | ||| | | | | | | | | | | | | | | | | | | | | | |
Db      1 MKLTCMMIVAVALLFTAWTFATADDSGNGLENSFSKAHHEMKNP EASKLNRKCIQEDPCE 600

QY      55 RIAYNCCCTGSC 65
      | : || | | |
Db      61 MIRHTCCVGVG 71

```


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QY	61	CTGSC	65
Db	61	C-GYC	64

RESULT 2
US-09-74

```

; Sequence 207, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 207
; LENGTH: 76
; TYPE: PRT
; ORGANISM: Conus distans
US-09-749-637A-207

```

Query Match	40.3%;	Score 152.5;	DB 9;	Length 76;
Best Local Similarity	48.6%;	Pred. No. 1.3e-08;		
Matches	36;	Conservative 12;	Mismatches 21;	Indels 5;
				Gaps 4;

```
QY      1 MKLTGVIVAVLLLTACQLIT-ADDSRGTQKHRLABSDTKLS-MSTRCKGKTGKPCPSRAY 58
        |||||:::||||| | | :| ||||| | | ::||
Db      1 MKLTCMLIIAVLEFLTACQLSTNASYARSKQHRYLRSTDKNSKLTRCNEAQEHCTQNP- 59
```

```
QY      59 NCCTGSCRS--GKC 70
      .  :||: || |:||
Db      60 DCCSESCNKFVGRC 73
```

RESULT 3

Sequence 48, Application US/09749637A
Patent No. US20020173449A1
GENERAL INFORMATION:
APPLICANT: University of Utah Research Foundation
APPLICANT: Cognetix, Inc.
APPLICANT: Olivera, Baldomero M.
APPLICANT: Cartier, G. Edward
APPLICANT: Watkins, Maren
APPLICANT: Hillyard, David R.
APPLICANT: McIntosh, J. Michael
APPLICANT: Layer, Richard T.
APPLICANT: Jones, Robert M.
TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
FILE REFERENCE: 2314-227
CURRENT APPLICATION NUMBER: US/09/749,637A
CURRENT FILING DATE: 2000-12-28
PRIOR APPLICATION NUMBER: US 60/243,412
PRIOR FILING DATE: 2000-10-27
PRIOR APPLICATION NUMBER: US60/219,440

```

; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 48
; LENGTH: 77
; TYPE: PRT
; ORGANISM: Conus magus
;
US-09-749-637A-48

```

Query Match	38.9%	Score 147;	DB 9;	length 77;
Best Local Similarity	43.7%;	Pred. No. 4.7e-08;		
Matches	31; Conservative	9; Mismatches	25; Indels	6; Gaps

```

QY      1 MLTLCVIVAVLLLTACQLITADDS-RGTOK-----HRLNRSDTKLSMSTRCKGTGKPCS 54
        |||||:||||| || ||||| | ||| :||| :|||
DB      1 MLTLCVMIIVAVLELTWVTFATADDSGNGLEKLFNAHHHEKKNPEASKLNKRCCKQADEPCD 60

```

QY .	55 RIAYNCCTGSC 65
	:
Db	61 VFSLCCTGIC 71

RESULT 4

```

: Sequence 294, Application US/09749637A
: Patent No. US20020173449A1
:
: GENERAL INFORMATION:
: APPLICANT: University of Utah Research Foundation
: APPLICANT: Cognetix, Inc.
: APPLICANT: Olivera, Baldomero M.
: APPLICANT: Cartier, G. Edward
: APPLICANT: Watkins, Maren
: APPLICANT: Hilliard, David R.
: APPLICANT: McIntosh, J. Michael
: APPLICANT: Layer, Richard T.
: APPLICANT: Jones, Robert M.
: TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
:
: FILE REFERENCE: 2314-227
:
: CURRENT APPLICATION NUMBER: US/09/749,637A
:
: CURRENT FILING DATE: 2000-12-28
:
: PRIOR APPLICATION NUMBER: US 60/243,412
:
: PRIOR FILING DATE: 2000-10-27
:
: PRIOR APPLICATION NUMBER: US60/219,440
:
: PRIOR FILING DATE: 2000-07-20
:
: PRIOR APPLICATION NUMBER: US 60/214,263
:
: PRIOR FILING DATE: 2000-06-26
:
: PRIOR APPLICATION NUMBER: US 60/173,754
:
: PRIOR FILING DATE: 1999-12-30
:
: NUMBER OF SEQ ID NOS: 409
:
: SOFTWARE: PatentIn version 3.0
:
: SEQ ID NO 294
:
: LENGTH: 77
:
: TYPE: PRT
:
: ORGANISM: Conus marmoreus
:
: US-09-749-637A-294

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Query Match	37.8%;	Score 143;	DB 9;	Length 77;
Best Local Similarity	42.3%;	Pred. No. 1.2e-07;		
Matches 30;	Conservative 9;	Mismatches 26;	Indels 6;	Gaps 1,

```

QY      1 MKLTCVAVVALLLTACQLITADDSRG-----TQKHRLASDGTKLSMSTRCKGTGKPCPS 54
          |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Db      1 MKLTCVAVVAVLFTAWTFEATADDPNGLENLFSAKHHEKMKNEASKLNKRCPTNGELCD 60

```

```
QY 55 RIAYNCCTGSC 65
      : ||| |
Db 61 VVEQNCCTYC 71
```

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RESULT 5
US-09-749-637A-330
; Sequence 330, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 330
; LENGTH: 77
; TYPE: PRT
; ORGANISM: Conus lividus
US-09-749-637A-330

Query Match      37.8%; Score 143; DB 9; Length 77;
Best Local Similarity 42.3%; Pred. No. 1.2e-07;
Matches 30; Conservative 9; Mismatches 26; Indels 6; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLTADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPCS 54
DB 1 MKLTCVIVAVLFLTAWTFATADDPNGLNLFSAHHEMKNPASKLNKRCPTGELCD 60

QY 55 RIAYNCCTGSC 65
DB 61 VEQNCCCTYC 71

RESULT 6
US-09-749-637A-42
; Sequence 42, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
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; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 42
; LENGTH: 77
; TYPE: PRT
; ORGANISM: Conus gloriamaris
US-09-749-637A-42

Query Match      37.6%; Score 142; DB 9; Length 77;
Best Local Similarity 42.3%; Pred. No. 1.5e-07;
Matches 30; Conservative 12; Mismatches 23; Indels 6; Gaps 2;

QY 1 MKLTCVIVAVLLTACQLTADDSR-GTQK-----HRLRSDFKLSMSTRCKGTGKPCS 54
DB 1 MKLTCMIVAVLFLTAWTFATADDPNGLKLFNTHEMKNPASKLNKRCROADESCN 60

QY 55 RIAYNCCTGSC 65
DB 61 VPSLDCCGTGLC 71

RESULT 7
US-09-749-637A-39
; Sequence 39, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 39
; LENGTH: 77
; TYPE: PRT
; ORGANISM: Conus gloriamaris
US-09-749-637A-39

Query Match      36.8%; Score 139; DB 9; Length 77;
Best Local Similarity 39.4%; Pred. No. 3e-07;
Matches 28; Conservative 12; Mismatches 25; Indels 6; Gaps 1;

QY 1 MKLTCVIVAVLLTACQLTADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPCS 54
DB 1 MKLTCMIVAVLFLTAWTFATADDPNGLNLFSAHHEMKNPASKLNKRCRLGAECD 60

QY 55 RIAYNCCTGSC 65
DB 61 VISQNCCTGTC 71

RESULT 8
US-09-749-637A-86
; Sequence 86, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
```

Query Match	36.8%;	Score 139;	DB 9;	Length 80;
Best Local Similarity	39.4%;	Pred. No. 3.1e-07;		
Matches 28; Conservative	11;	Mismatches 26;	Indels 6;	Gaps 1;

RESULT 9
US-09-749-637A-26
; Sequence 26, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:

```

GENERAL INFORMATION
APPLICANT: University of Utah Research Foundation
APPLICANT: Cognetix, Inc.
APPLICANT: Olivera, Baldomero M.
APPLICANT: Cartier, G. Edward
APPLICANT: Watkins, Maren
APPLICANT: Hillyard, David R.
APPLICANT: McIntosh, J. Michael
APPLICANT: Layer, Richard T.
APPLICANT: Jones, Robert M.
TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
FILE REFERENCE: 2314-227
CURRENT APPLICATION NUMBER: US/09/749,637A
CURRENT FILING DATE: 2000-12-28
PRIOR APPLICATION NUMBER: US 60/243,412
PRIOR FILING DATE: 2000-10-27
PRIOR APPLICATION NUMBER: US60/219,440
PRIOR FILING DATE: 2000-07-20
PRIOR APPLICATION NUMBER: US 60/214,263
PRIOR FILING DATE: 2000-06-26
PRIOR APPLICATION NUMBER: US 60/173,754
PRIOR FILING DATE: 1999-12-30
NUMBER OF SEQ ID NOS: 409
SOFTWARE: PatentIn version 3.0
SEQ ID NO 26
LENGTH: 78
TYPE: PRT

```

Query Match	36.6%;	Score 138.5;	DB 9;	Length 78;
Best Local Similarity	41.7%;	Pred. No. 3.4e-07;		
Matches	30;	Mismatches	24;	Indels 7; Gaps 2;

RESULT 10
US-09-749-637A-33
; Sequence 33, Application US/09749637A
; Patent No. US20020173449A1

```

; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 33
; LENGTH: 78
; TYPE: PRT
; ORGANISM: Conus ammiralis
US-09-749-637A-33

```

Query Match	36.6%	Score 138.5;	DB 9;	Length 78;
Best Local Similarity	41.7%	Pred. NO. 3.4e-07;		
Matches 30; Conservative	11;	Mismatches 24;	Indels 7;	Gaps 2;

[illegible]

RESULT 11
US-09-749-637A-65
; Sequence 65, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetlix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren


```

; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 65
;
; LENGTH: 80
;
; TYPE: PRT
;
; ORGANISM: Conus aulicus
;
US-09-749-637A-65

```

Query Match	36.08;	Score 136;	DB 9;	Length 80;
Best Local Similarity	39.48;	Pred. No. 6.2e-07;		
Matches	28;	Conservative	11;	Mismatches 26;
			Indels	6;
			Gaps	1;

```

Qy      1 MKLTCVIVAVALLLTACQILITADDSRG-----TQKHRLRSDTKLSMSTRCKGTGKPCPS 54
          |||||:|||| ||| |||| |      ::      :: |||      : | :
Db      1 MKLTCVMIVAVLFTAWTFTATADDPNGLNLFESKIQHKMKNP EASKLNKRCCKAENELCN 60

```

```
QY      55 RIAYNCCCTGSC 65
          ||| | : |
Db      61 IFIQNCCDGTG 71
```

RESULT 12
US-09-749

```

; Sequence 22, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 22
; LENGTH: 78
; TYPE: PRT
; ORGANISM: Conus textile
; US-9-749-637A-22

```

Query Match	35.8%;	Score 135.5;	DB 9;	Length 78;
Best Local Similarity	40.3%;	Pred. No. 6.8e-07;		

	Matches	29;	Conservative	12;	Mismatches	24;	Indels	7;	Gaps	2;
QY	1	MKLTGVIVAVLLLTACQLITADDSRG-----TQKRALRSDTKLSMSTR-CKGTGKPC	53	::		:		:::		
Db	1	MKLTGMIVAVVFLTAWTFATADPRNGLGNLFSNAHHEMKNPESAKLNKRWCCKQSGEMC	60							
QY	54	SRIAYNCCTGSC	65	:						
Db	61	NLLDQNCDDGYC	72							

RESULT 13
US-09-749

```

; Sequence 30, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 30
; LENGTH: 78
; TYPE: PRT
; ORGANISM: Conus distans
US-09-749-637A-30

```

Query Match	35.8%;	Score 135.5;	DB 9;	Length 78;
Best Local Similarity	40.3%;	Pred. No. 6.8e-07;		
Matches 29;	Conservative 12;	Mismatches 24;	Indels 7;	Gaps 2;

```

QY      1 M K L T C V I V A V L L L T A C O L I T A D D S R G ----- T Q K H R A L S D T K L S M S T R - C K G T G K P C 53
      |||||::||||| ||| ||||| | : | ::| ::| | | | : | : |
Db      1 M K L T C M I V A V L F L T A W T F A T A D D P R N G I G N L F S N A H E M K N P E A S K L I N K R W C K O S G E N C 60

```

QY	54	SRIAYNCCTGSC	65
		: :	
Db	61	NLDPONCCDGYC	72

RESULT 14

```

US-09-749-637A-321
; Sequence 321, Application US/09749637A
; Patent No. US20020173449A1
;
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
;
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides

```

```

; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 321
; LENGTH: 76
; TYPE: PRT
; ORGANISM: Conus characteristicus
US-09-749-637A-321

```

Query Match	35.48;	Score 134;	DB 9;	Length 76;
Best Local Similarity	42.38;	Pred. No. 9.4e-07;		
Matches	30;	Mismatches	26;	Indels 6;
				Gaps 1;

```

QY      1 MKLTCVIVAVALLLTFACQLITADDSRG-----TQKRALRSDTKLSMSTRCKGTGKPPCS 54
      |||||  |||  :|||  :  :  ||  |  :  |
Db      1 MKLTCVIVAVLFTATMTFTADDSRNGLENTLPKARHEMKNP EASKLNKRCYDPGEFFCG 60

```

```

OY      55 RIAYNCTGSC 65
        :|||||
DB      61 PGFGDCTGFC 71

```

```

RESULT 15
US-09-749-637A-83
; Sequence 83, Application US/09749637A
; Patent No. US20020173449A1
; GENERAL INFORMATION:
; APPLICANT: University of Utah Research Foundation
; APPLICANT: Cognetix, Inc.
; APPLICANT: Olivera, Baldomero M.
; APPLICANT: Cartier, G. Edward
; APPLICANT: Watkins, Maren
; APPLICANT: Hillyard, David R.
; APPLICANT: McIntosh, J. Michael
; APPLICANT: Layer, Richard T.
; APPLICANT: Jones, Robert M.
; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
; FILE REFERENCE: 2314-227
; CURRENT APPLICATION NUMBER: US/09/749,637A
; CURRENT FILING DATE: 2000-12-28
; PRIOR APPLICATION NUMBER: US 60/243,412
; PRIOR FILING DATE: 2000-10-27
; PRIOR APPLICATION NUMBER: US60/219,440
; PRIOR FILING DATE: 2000-07-20
; PRIOR APPLICATION NUMBER: US 60/214,263
; PRIOR FILING DATE: 2000-06-26
; PRIOR APPLICATION NUMBER: US 60/173,754
; PRIOR FILING DATE: 1999-12-30
; NUMBER OF SEQ ID NOS: 409
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 83
; LENGTH: 80
; TYPE: PRT
; ORGANISM: Conus pennaceus
US-09-749-637A-83

```

Query Match	35.4%	Score 134;	DB 9;	Length 80;
Best Local Similarity	38.0%	Pred. No. 9.9e-07;		
Matches 27; Conservative	11;	Mismatches 27;	Indels 6;	Gaps 1;

```

Qy      1 MKLTQWIVAVLLLTACQLTADDSRG-----TQKRALRSDPTKLSMSTRCKGTGKPCS 54
         |||||::||| ||| |||||::|::| |||
Db      1 MKLTQWIVAVLFTATWTATADDSNGLENLESKAHHEMKNPASKLNKRCIPQFDPD 60

```

```

QY      55 RIAYNCCCTGSC 65
          : : | | | |
Db      61 MVRHTCKKGLC 71

```

Search completed: May 20, 2003, 15:53:51
Job time : 52.0312 secs

GenCore version 5.1.4_p5_4578
Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: May 20, 2003, 15:32:50 ; Search time 27.0833 seconds
(without alignments)
190.197 Million cell updates/sec

Title: US-09-910-082A-375
Perfect score: 153
Sequence: 1 CKGTGKPCSRIAYNCTGSCRSKGC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_21:*

- 1: sp_archaea:*
- 2: sp_bacteria:*
- 3: sp_fungi:*
- 4: sp_human:*
- 5: sp_invertebrate:*
- 6: sp_mammal:*
- 7: sp_mhc:*
- 8: sp_organelle:*
- 9: sp_phage:*
- 10: sp_plant:*
- 11: sp_rodent:*
- 12: sp_virus:*
- 13: sp_vertebrate:*
- 14: sp_unclassified:*
- 15: sp_virus:*
- 16: sp_bacteriaph:*
- 17: sp_archaeap:*

Pred. NO. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	142	92.8	66	5	Q9NCV3	Q9ncv3 conus stria
2	142	92.8	66	5	Q9NCV2	Q9ncv2 conus stria
3	142	92.8	66	5	Q9NCV1	Q9ncv1 conus stria
4	134	87.6	66	5	Q9N6N6	Q9n6n6 conus stria
5	134	87.6	66	5	Q9NCV4	Q9ncv4 conus stria
6	134	87.6	66	5	Q9NCV0	Q9ncv0 conus stria
7	134	87.6	66	5	Q9NCU1	Q9ncu1 conus stria
8	112	73.2	66	5	Q9N633	Q9n633 conus catus
9	112	73.2	66	5	Q9N628	Q9n628 conus catus
10	112	73.2	66	5	Q9N625	Q9n625 conus catus
11	112	73.2	66	5	Q9NCW6	Q9ncw6 conus catus
12	112	73.2	66	5	Q9NCW5	Q9ncw5 conus catus
13	112	73.2	66	5	Q9NCW3	Q9ncw3 conus catus
14	112	73.2	66	5	Q9NCW2	Q9ncw2 conus catus
15	111	72.5	66	5	Q9NCW4	Q9ncw4 conus catus
16	110	71.9	66	5	Q9NCW1	Q9ncw1 conus catus

17	108	70.6	66	5	Q9NCV5	Q9ncv5 conus catus
18	105	68.6	66	5	Q9NCV7	Q9ncv7 conus catus
19	104	68.0	66	5	Q9N6F7	Q9n6f7 conus catus
20	100	65.4	66	5	Q9NCV6	Q9ncv6 conus catus
21	94	61.4	66	5	Q9N6F8	Q9n6f8 conus catus
22	94	61.4	66	5	Q9NCW0	Q9ncw0 conus catus
23	94	61.4	66	5	Q9NCV9	Q9ncv9 conus catus
24	85	55.6	66	5	Q9NCV8	Q9ncv8 conus catus
25	66	43.1	2664	5	Q26033	Q26033 plasmodium
26	62.5	40.8	77	5	Q9U653	Q9u653 conus texti
27	62.5	40.8	77	5	Q9U652	Q9u652 conus texti
28	61.5	40.2	50	12	Q8Q1C7	Q8q1c7 mamestra co
29	61	39.9	78	5	Q9U656	Q9u656 conus texti
30	61	39.9	78	5	Q9U655	Q9u655 conus texti
31	61	39.9	80	5	Q9U660	Q9u660 conus penna
32	60.5	39.5	139	3	Q12492	Q12492 saccharomyc
33	60	39.2	67	5	Q9N604	Q9n604 conus stria
34	60	39.2	67	5	Q9NCU6	Q9ncu6 conus stria
35	60	39.2	67	5	Q9NCU3	Q9ncu3 conus stria
36	60	39.2	67	5	Q9NCU2	Q9ncu2 conus stria
37	59.5	38.9	73	5	Q9BPB4	Q9bpb4 conus texti
38	59	38.6	67	5	Q9NCU5	Q9ncu5 conus stria
39	59	38.6	72	5	Q9X2L5	Q9xzl5 conus stria
40	59	38.6	2150	5	O44131	O44131 caenorhabdl
41	58.5	38.2	52	12	Q9PYR8	Q9pyr8 xestia c-n1
42	58	37.9	72	5	Q9X2L4	Q9xzl4 conus stria
43	58	37.9	816	17	O28331	O28331 archaeoglob
44	57.5	37.6	73	5	Q9BPB2	Q9bpb2 conus texti
45	57.5	37.6	1329	5	Q9BMB0	Q9bmb0 caenorhabdl

ALIGNMENTS

RESULT 1

Q9NCV3 PRELIMINARY; PRT; 66 AA.

ID Q9NCV3

AC Q9NCV3; 01-OCT-2000 (TREMBLrel. 15, Created)

DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)

DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)

DE Four-loop conotoxin (Fragment).

OS Conus striatus (Striated cone).

OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;

OC Neogastropoda; Conoidea; Conidae; Conus.

OX NCBI_TaxID=6493;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=CSTRH_1_3;

RA Duda T.F., Palumbi S.R.;

RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";

RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.

DR EMBL; AF174242; AAF89906.1; .

DR HSSP; P05484; 1MVI.

DR InterPro; IPR004214; Conotoxin.

DR Pfam; PF02950; Conotoxin; 1.

FT NON_TER 1 1

SQ SEQUENCE 66 AA; 7019 MW; 89B89B7AF1A7C7B3 CRC64;

Query Match 92.8%; Score 142; DB 5; Length 66;
Best Local Similarity 92.0%; Pred. No. 7.2e-14;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKAAGKPCSRIAYNCTGSCRSKGC 65

RESULT 2

Q9NCV2 PRELIMINARY; PRT; 66 AA.
ID Q9NCV2
AC Q9NCV2;

DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_4;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174243; AAF89907.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7033 MW; 887E401681A7C7B3 CRC64;

Query Match 92.8%; Score 142; DB 5; Length 66;
Best Local Similarity 92.0%; Pred. No. 7.2e-14;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKAAGKPCSRIAYNCTGSCRSKGC 65

RESULT 3
Q9NCV1 PRELIMINARY; PRT; 66 AA.

AC Q9NCV1;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_6;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174245; AAF89909.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6976 MW; 29A992736137DA05 CRC64;

Query Match 92.8%; Score 142; DB 5; Length 66;
Best Local Similarity 92.0%; Pred. No. 7.2e-14;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKAAGKPCSRIAYNCTGSCRSKGC 65

RESULT 4
Q9N6N6 PRELIMINARY; PRT; 66 AA.
AC Q9N6N6;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, last annotation update)

DE Four-loop conotoxin precursor (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_5, AND CSTRH_1_1;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174244; AAF89908.1; -.
DR EMBL; AF174240; AAF89904.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6966 MW; 29A992710CA7DA05 CRC64;

Query Match 87.6%; Score 134; DB 5; Length 66;
Best Local Similarity 88.0%; Pred. No. 1.1e-12;
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKAAGKSCSRIAYNCTGSCRSKGC 65

RESULT 5
Q9NCV4 PRELIMINARY; PRT; 66 AA.

AC Q9NCV4;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CSTRH_1_2;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174241; AAF89905.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6980 MW; 286F491D7CA7DA05 CRC64;

Query Match 87.6%; Score 134; DB 5; Length 66;
Best Local Similarity 88.0%; Pred. No. 1.1e-12;
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKAAGKSCSRIAYNCTGSCRSKGC 65

RESULT 6
Q9NCV0 PRELIMINARY; PRT; 66 AA.
AC Q9NCV0;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).

OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CSTRH_1_7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174246; AAF89910.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6981 MW; 20CDC33D7CA7DA05 CRC64;

Query Match 87.6%; Score 134; DB 5; Length 66;
Best Local Similarity 88.0%; Pred. No. 1.1e-12;
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKAAGKSCSRIAYNCTGSCRSKGC 65

RESULT 7

O9NCU1 PRELIMINARY; PRT; 66 AA.
ID O9NCU1
AC O9NCU1;
DT 01-OCT-2000 (TReMBLrel. 15, Created)
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TReMBLrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CSTRH_R_1;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174267; AAF89931.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6951 MW; 0D9868C0A7A1A39F CRC64;

Query Match 87.6%; Score 134; DB 5; Length 66;
Best Local Similarity 88.0%; Pred. No. 1.1e-12;
Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKAAGKSCSRIAYNCTGSCRSKGC 65

RESULT 8

O9N633 PRELIMINARY; PRT; 66 AA.
ID O9N633
AC O9N633;
DT 01-OCT-2000 (TReMBLrel. 15, Created)
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TReMBLrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;

RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CCATH_1I_6, CCATH_1I_1, AND CCATH_1I_2;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174219; AAF89883.1; -.
DR EMBL; AF174214; AAF89878.1; -.
DR EMBL; AF174215; AAF89879.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7053 MW; E445338A6968A1AC CRC64;

Query Match 73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKKGASCRTSYDCTGSCRSKGC 65

RESULT 9

O9N628 PRELIMINARY; PRT; 66 AA.
ID O9N628
AC O9N628;
DT 01-OCT-2000 (TReMBLrel. 15, Created)
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TReMBLrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CCATH_1II_9, AND CCATH_1II_6;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174229; AAF89893.1; -.
DR EMBL; AF174226; AAF89890.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7057 MW; E7AA5E310968B7DA CRC64;

Query Match 73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 41 CKSTGASCRTSYDCTGSCRSKGC 65

RESULT 10

O9N625 PRELIMINARY; PRT; 66 AA.
ID O9N625
AC O9N625;
DT 01-OCT-2000 (TReMBLrel. 15, Created)
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TReMBLrel. 21, Last annotation update)
DE Four-loop conotoxin precursor (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;


```
[1]
RN SEQUENCE FROM N.A.
RC STRAIN-VARIOUS STRAINS;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
   eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174228; AAF89892.1; -.
DR EMBL; AF174221; AAF89885.1; -.
DR EMBL; AF174222; AAF89886.1; -.
DR EMBL; AF174224; AAF89888.1; -.
DR EMBL; AF174225; AAF89889.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7056 MW; EA11338A6968B7DA CRC64;

Query Match          73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;
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```
OY 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25
   ||| | | | | | | | | | | | | |
Db 41 CKGTGASCRRTSYDCTGSCRSRSGRC 65
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RESULT 11
ID Q9NCW6 PRELIMINARY; PRT; 66 AA.
AC Q9NCW6;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11_3;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
   eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174216; AAF89880.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7023 MW; E445339B6968B0AC CRC64;

Query Match          73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;
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```
OY 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25
   ||| | | | | | | | | | | | | |
Db 41 CKGTGASCRRTSYDCTGSCRSRSGRC 65

RESULT 12
ID Q9NCW5 PRELIMINARY; PRT; 66 AA.
AC Q9NCW5;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
```

```
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11_4;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
   eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174217; AAF89881.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7083 MW; E445338A7939E4A8 CRC64;

Query Match          73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;
```

```
OY 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25
   ||| | | | | | | | | | | | | |
Db 41 CKGTGASCRRTSYDCTGSCRSRSGRC 65
```

```
RESULT 13
ID Q9NCW3 PRELIMINARY; PRT; 66 AA.
AC Q9NCW3;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CCATH_11_7;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
   eating Conus.";
RL Submitted (Aug-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174220; AAF89884.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7054 MW; E9FE5E310968A1AC CRC64;

Query Match          73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;
```

```
OY 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25
   ||| | | | | | | | | | | | | |
Db 41 CKGTGASCRRTSYDCTGSCRSRSGRC 65

RESULT 14
ID Q9NCW2 PRELIMINARY; PRT; 66 AA.
AC Q9NCW2;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A.
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RC STRAIN-CCATH_11I_3;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
eating Conus.";
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174223; AAF89887.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 7026 MW; EA11339E382DB7DA CRC64;

Query Match 73.2%; Score 112; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2e-09;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRRIAYNCCTGSCRSRC 25
||| | | | : | | | | | | | | : |
Db 41 CKGTGASCRRTSYDCCCTGSCRSRC 65

RESULT 15

O9NCW4
ID O9NCW4 PRELIMINARY; PRT; 66 AA.
AC O9NCW4;
DT 01-OCT-2000 (TREMBLrel. 15, Created)
DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Four-loop conotoxin (Fragment).
OS Conus catus.
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID-101291;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-CCATH_11_5;
RA Duda T.F., Palumbi S.R.;
RT "Molecular evolution of four-loop conotoxin precursors from fish-
eating Conus.";
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF174218; AAF89882.1; -.
DR HSSP; P05484; 1MVI.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
FT NON_TER 1
SQ SEQUENCE 66 AA; 6995 MW; E445338A6AA7A1AC CRC64;

Query Match 72.5%; Score 111; DB 5; Length 66;
Best Local Similarity 68.0%; Pred. No. 2.8e-09;
Matches 17; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRRIAYNCCTGSCRSRC 25
||| | | | : | | | | | | | | : |
Db 41 CKGTGASCRRTSYDCCCTGSCRSRC 65

Search completed: May 20, 2003, 15:40:52
Job time : 28.0833 secs

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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:22:55 ; Search time 27.3438 Seconds
(without alignments)
121.829 Million cell updates/sec

Title: US-09-910-082a-375
Perfect score: 153
Sequence: 1 CKGTGKPCSRIRAYNCCCTGSCRSKGC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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2: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
3: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
4: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
5: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*
6: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1986.DAT:*
8: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987.DAT:*
9: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
10: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
11: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1990.DAT:*
12: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*
13: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1992.DAT:*
14: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1993.DAT:*
15: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1994.DAT:*
16: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1995.DAT:*
17: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1996.DAT:*
18: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*
19: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1998.DAT:*
20: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1999.DAT:*
21: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:*
22: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
23: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	153	100.0	25	23	ABB96833
2	153	100.0	25	23	ABB96867
3	153	100.0	71	23	ABB96629
4	153	100.0	71	23	ABB96657
5	152	99.3	25	23	ABB96838
6	152	99.3	71	23	ABB96634
7	144	94.1	25	23	ABB96815
8	144	94.1	71	23	ABB96607
9	142	92.8	25	21	AAV87540
10	142	92.8	71	21	AAV87541

11	141	92.2	25	23	ABB96817	Omega-conopeptide
12	141	92.2	71	23	ABB96609	Omega-conopeptide
13	139	90.8	25	23	ABB96870	Omega-conopeptide
14	139	90.8	71	23	ABB96661	Omega-conopeptide
15	136	88.9	25	23	ABB96763	Omega-conopeptide
16	135	88.2	25	23	ABB96737	Omega-conopeptide
17	134	87.6	25	23	ABB96888	Omega-conopeptide
18	134	87.6	71	23	ABB96680	Omega-conopeptide
19	131	85.6	25	23	ABB96767	Omega-conopeptide
20	130	85.0	25	23	ABB96732	Omega-conopeptide
21	127	83.0	25	23	ABB96710	Omega-conopeptide
22	126	82.4	25	18	AAW19568	SNX-273, omega con
23	126	82.4	25	22	AAB97041	Omega-conch toxin
24	126	82.4	25	23	ABB96787	Omega-conopeptide
25	124	81.0	25	23	ABB96712	Omega-conopeptide
26	123	80.4	25	18	AAW12978	Omega-conopeptide
27	123	80.4	25	19	AAW72618	Omega-conopeptide
28	123	80.4	25	20	AAW95577	Conus genus analog
29	123	80.4	25	21	AAB14363	Omega-conopeptide
30	123	80.4	25	22	AAB19455	Sequence of an ome
31	122	79.7	25	12	AAR12544	Omega conotoxin pe
32	122	79.7	25	14	AAR37763	SNX-190. Syntheti
33	122	79.7	25	14	AAR37766	SNX-190. Syntheti
34	122	79.7	25	14	AAR39618	SNX-194. Syntheti
35	122	79.7	25	14	AAR39621	SNX-194. Syntheti
36	122	79.7	25	18	AAW19555	SNX-190, omega con
37	122	79.7	25	18	AAW19558	SNX-194, omega con
38	122	79.7	25	18	AAW12975	Omega conopeptide
39	122	79.7	25	18	AAW12983	Omega conopeptide
40	122	79.7	25	19	AAW72615	Conus genus analog
41	122	79.7	25	19	AAW72623	Conus genus analog
42	122	79.7	25	20	AAW95582	Analog omega-conop
43	122	79.7	25	20	AAW95574	Analog omega-conop
44	122	79.7	25	21	AAB14360	Omega-conopeptide
45	122	79.7	25	21	AAB14368	Omega-conopeptide

ALIGNMENTS

RESULT 1	ABB96833	standard; Peptide; 25 AA.
ID	ABB96833	
XX	ABB96833;	
AC	12-JUL-2002	(first entry)
XX		
DT		
XX		
DE	Omega-conopeptide Cn6:2 toxin sequence.	
XX		
KW	Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;	
KW	neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;	
KW	antimigraine; antidiabetic; tranquiliser; vulnery; antipsychotic;	
KW	anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;	
KW	neurological disorder; neurotoxic injury; hypoxia; anoxia; ischemia;	
KW	stroke; cerebrovascular accident; brain trauma; spinal chord trauma;	
KW	drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;	
KW	migraine; inflammation; cardiovascular disorder; psychiatric disorder;	
KW	psychosis; anxiety; schizophrenia.	
XX		
OS	Conus consors.	
XX		
PN	WO200207675-A2.	
XX		
PD	31-JAN-2002.	
XX		
PF	23-JUL-2001; 2001WO-US23041.	
XX		
PR	21-JUL-2000; 2000US-219616P.	
PR	05-FEB-2001; 2001US-265888P.	
XX		
PA	(UTAH) UNIV UTAH RES FOUND.	
PA	(COGN-) COGNETIX INC.	

XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX WPI; 2002-257318/30.
DR
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX Claim 1(a); Page 71; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnery, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.
XX
SQ Sequence 25 AA;
Query Match 100.0%; Score 153; DB 23; Length 25;
Best Local Similarity 100.0%; Pred. No. 1.6e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGTGKPCSRIRAYNCCTGSCRSKGC 25
1
1 CKGTGKPCSRIRAYNCCTGSCRSKGC 25
DB
RESULT 2
ABB96867
ID ABB96867 standard; Peptide; 25 AA.
XX
AC ABB96867;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide M6.1 toxin sequence.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquilliser; vulnery; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus magus.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
XX 05-FEB-2001; 2001US-265888P.
XX

PA (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX WPI; 2002-257318/30.
DR
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX Claim 1(a); Page 72; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnery, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.
XX
SQ Sequence 25 AA;
Query Match 100.0%; Score 153; DB 23; Length 25;
Best Local Similarity 100.0%; Pred. No. 1.6e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGTGKPCSRIRAYNCCTGSCRSKGC 25
1
1 CKGTGKPCSRIRAYNCCTGSCRSKGC 25
DB
RESULT 3
ABB96629
ID ABB96629 standard; Peptide; 71 AA.
XX
AC ABB96629;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Cn6.2 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquilliser; vulnery; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus consors.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
XX

PR 05-FEB-2001; 2001US-265888P.
XX
PA (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98888.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
PS Claim 1(c); Page 38; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antipsychotic, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia or hypoglycaemic events; stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
QY 1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
Db 46 CKGTGKPCSRIRAYNCTGSCRSKGC 70
Query Match 100.0%; Score 153; DB 23; Length 71;
Best Local Similarity 100.0%; Pred. No. 3.7e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
RESULT 4
ABB96657
ID ABB96657 standard; Peptide; 71 AA.
XX
AC ABB96657;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide M6.1 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus magus.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.

XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
PA (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98916.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
PS Claim 1(c); Page 52; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antipsychotic, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia or hypoglycaemic events; stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
QY 1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
Db 46 CKGTGKPCSRIRAYNCTGSCRSKGC 70
Query Match 100.0%; Score 153; DB 23; Length 71;
Best Local Similarity 100.0%; Pred. No. 3.7e-10;
Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
RESULT 5
ABB96838
ID ABB96838 standard; Peptide; 25 AA.
XX
AC ABB96838;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Cn6.7 toxin sequence.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus consors.
XX

XX PN WO200207675-A2.
XX PD 31-JAN-2002.
XX PF 23-JUL-2001; 2001WO-US23041.
XX PR 21-JUL-2000; 2000US-219616P.
XX PR 05-FEB-2001; 2001US-265888P.
XX PA (UTAH) UNIV UTAH RES FOUND.
XX PA (COGN-) COGNETIX INC.
XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
XX PI Jacobsen R, Jones RM, Cartier GE;
XX DR WPI; 2002-257318/30.
XX PT New omega-conopeptides useful for treating disorders associated with
XX PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX PT cardiovascular disorders -
XX PS Claim 1(a); Page 71; 195pp; English.
XX CC The invention relates to isolated omega-conopeptides, nucleic acid
XX CC sequences encoding them, and propeptide sequences. The activity of
XX CC the peptides of the invention may be described as, analgesic,
XX CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
XX CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
XX CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
XX CC peptides of the invention act by modulating the activity of voltage gated
XX CC ion channels. They may be used for treating or preventing disorders
XX CC associated with voltage gated ion channels such as neurological
XX CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
XX CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
XX CC cerebrovascular accident, brain or spinal chord trauma, drowning,
XX CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
XX CC migraine; inflammation or cardiovascular disorders. They may also be used
XX CC for treating psychiatric disorders e.g. psychosis, anxiety or
XX CC schizophrenia. The analgesic agents of the invention show diminished side
XX CC effects and toxicity, and are non-addictive. The sequences given in
XX CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.
SQ Sequence 25 AA;
Query Match 99.3%; Score 152; DB 23; Length 25;
Best Local Similarity 96.0%; Pred. No. 2e-10;
Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGTGKPCSRVAYNCCTGSCRSKGC 25
b 1 CKGTGKPCSRVAYNCCTGSCRSKGC 25
RESULT 6
ABB96634
ID ABB96634 standard; Peptide; 71 AA.
XX AC ABB96634;
XX DT 12-JUL-2002 (first entry)
XX DE Omega-conopeptide Cn6.7 propeptide.
XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.

XX OS Conus consors.
XX PN WO200207675-A2.
XX PD 31-JAN-2002.
XX PF 23-JUL-2001; 2001WO-US23041.
XX PR 21-JUL-2000; 2000US-219616P.
XX PR 05-FEB-2001; 2001US-265888P.
XX PA (UTAH) UNIV UTAH RES FOUND.
XX PA (COGN-) COGNETIX INC.
XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
XX PI Jacobsen R, Jones RM, Cartier GE;
XX DR WPI; 2002-257318/30.
XX DR N-PSDB; ABL98893.
XX PT New omega-conopeptides useful for treating disorders associated with
XX PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX PT cardiovascular disorders -
XX PS Claim 1(c); Page 40; 195pp; English.
XX CC The invention relates to isolated omega-conopeptides, nucleic acid
XX CC sequences encoding them, and propeptide sequences. The activity of
XX CC the peptides of the invention may be described as, analgesic,
XX CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
XX CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
XX CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
XX CC peptides of the invention act by modulating the activity of voltage gated
XX CC ion channels. They may be used for treating or preventing disorders
XX CC associated with voltage gated ion channels such as neurological
XX CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
XX CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
XX CC cerebrovascular accident, brain or spinal chord trauma, drowning,
XX CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
XX CC migraine; inflammation or cardiovascular disorders. They may also be used
XX CC for treating psychiatric disorders e.g. psychosis, anxiety or
XX CC schizophrenia. The analgesic agents of the invention show diminished side
XX CC effects and toxicity, and are non-addictive. The sequences given in
XX CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
XX CC sequences.
SQ Sequence 71 AA;
Query Match 99.3%; Score 152; DB 23; Length 71;
Best Local Similarity 96.0%; Pred. No. 4.8e-10;
Matches 24; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
QY 1 CKGTGKPCSRVAYNCCTGSCRSKGC 25
Db 46 CKGTGKPCSRVAYNCCTGSCRSKGC 70
RESULT 7
ABB96815
ID ABB96815 standard; Peptide; 25 AA.
XX AC ABB96815;
XX DT 12-JUL-2002 (first entry)
XX DE Omega-conopeptide Ay6.1 toxin sequence.
XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;

KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
OS Conus aurisiacus.
XX
XX WO200207675-A2.
PN
XX 31-JAN-2002.
PD
XX 23-JUL-2001; 2001WO-US23041.
PF
XX 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
PR
XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX WPI; 2002-257318/30.
DR
XX
XX New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX
PS Claim 1(a); Page 71; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnery, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.
XX
SQ Sequence 25 AA;
QY
Query Match 94.1%; Score 144; DB 23; Length 25;
Best Local Similarity 92.0%; Pred. NO. 1.6e-09;
Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Db 1 CKGTGKPCSRIRAYNCTGTGSCRSKGC 25
1 CKGKGKPCSRISYNCTGTGSCRSKGC 25
RESULT 8
ABB96607
ID ABB96607 standard; Peptide; 71 AA.
XX
XX ABB96607;
AC
XX 12-JUL-2002 (first entry)
DT
XX
DE Omega-conopeptide Ay6.1 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquilliser; vulnery; antipsychotic;

KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
XX Conus aurisiacus.
OS
XX
XX WO200207675-A2.
PN
XX 31-JAN-2002.
PD
XX 23-JUL-2001; 2001WO-US23041.
PF
XX 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
PR
XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX WPI; 2002-257318/30.
DR
XX
XX New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX
PS Claim 1(c); Page 28; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquilliser, vulnery, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
QY
Query Match 94.1%; Score 144; DB 23; Length 71;
Best Local Similarity 92.0%; Pred. NO. 3.7e-09;
Matches 23; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Db 1 CKGTGKPCSRIRAYNCTGTGSCRSKGC 25
46 CKGKGKPCSRISYNCTGTGSCRSKGC 70
RESULT 9
AAY87540
ID AAY87540 standard; peptide; 25 AA.
XX
XX AAY87540;
AC
XX 18-JUL-2000 (first entry)
DT
XX
DE Mature conotoxin peptide #11.

XX Mature conotoxin; brocade cone shell; line cone shell; drug screening;
KW neuronal inhibitor; muscle inhibitor; analgesic.
XX
OS Conus sp.
XX
PN CN1237584-A.
XX
PD 08-DEC-1999.
XX
PF 30-APR-1999; 99CN-0106070.
XX
PR 30-APR-1999; 99CN-0106070.
XX
PA (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.
XX
PI Lu B, Huang P;
XX
DR WPI; 2000-351193/31.
XX
PT Conotoxin peptide from brocade cone shells useful as analgesic -
XX
PS Claim 1A; Page 5; 20pp; Chinese.
XX
CC The invention relates to 14 novel mature conotoxin peptides from marine
CC snails (Conus species); conotoxin precursor proteins; and cDNAs
CC encoding the conotoxin precursors. The mature peptide sequences were
CC discovered by obtaining conotoxin cDNA sequences from mRNA from the
CC brocade cone shell (Conus textile) or the line cone shell (Conus
CC striatus). The cDNA sequences were used to determine the conotoxin
CC precursor protein sequences, and the sequences of the mature conotoxin
CC peptides were inferred from the precursor sequences. The mature
CC conotoxin peptides can be obtained via chemical synthesis or by in vitro
CC gene expression. Conotoxins inhibit the function of neurons and muscle
CC cells. Certain conotoxins interfere with synaptic transmission, while
CC others act on muscle or at the neuromuscular junction. The 14 novel
CC conotoxins have unique receptor specificity and affinity, so can be
CC used as screening tools to identify new drugs. Conotoxin #11 (AY87540)
CC may be used for pain relief. Sequences AY87420, AY87522, AY87524,
CC AY87526, AY87528, AY87530, AY87532, AY87534, AY87536, AY87538,
CC AY87540, AY87542, AY87544 and AY87546 represent mature conotoxins
CC #1-#14, respectively.
XX
SQ Sequence 25 AA;
OY 1 CKGTGKPCSRRIAYNCTGSCRSKC 25
ID 1 CKAAGKPCSRRIAYNCTGSCRSKC 25
XX
RESULT 10
AY87541
ID AY87541 standard; protein; 71 AA.
XX
AC AY87541;
XX
DT 18-JUL-2000 (first entry)
XX
DE Conotoxin peptide #11 precursor.
XX
KW Conotoxin precursor; brocade cone shell; line cone shell; drug screening;
KW neuronal inhibitor; muscle inhibitor; analgesic.
XX
OS Conus sp.
XX
FH Key Location/Qualifiers
FT Misc-difference 6 /note= "Encoded by ATG"
XX

PN CN1237584-A.
XX
PD 08-DEC-1999.
XX
PF 30-APR-1999; 99CN-0106070.
XX
PR 30-APR-1999; 99CN-0106070.
XX
PA (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.
XX
PI Lu B, Huang P;
XX
DR WPI; 2000-351193/31.
XX
PT Conotoxin peptide from brocade cone shells useful as analgesic -
XX
PS Claim 1A; Page 5-6; 20pp; Chinese.
XX
CC The invention relates to 14 novel mature conotoxin peptides from marine
CC snails (Conus species); conotoxin precursor proteins; and cDNAs
CC encoding the conotoxin precursors. The mature peptide sequences were
CC discovered by obtaining conotoxin cDNA sequences from mRNA from the
CC brocade cone shell (Conus textile) or the line cone shell (Conus
CC striatus). The cDNA sequences were used to determine the conotoxin
CC precursor protein sequences, and the sequences of the mature conotoxin
CC peptides were inferred from the precursor sequences. The mature
CC conotoxin peptides can be obtained via chemical synthesis or by in vitro
CC gene expression. Conotoxins inhibit the function of neurons and muscle
CC cells. Certain conotoxins interfere with synaptic transmission, while
CC others act on muscle or at the neuromuscular junction. The 14 novel
CC conotoxins have unique receptor specificity and affinity, so can be
CC used as screening tools to identify new drugs. Conotoxin #11 (AY87540)
CC may be used for pain relief. Sequences AY87421, AY87523, AY87525,
CC AY87527, AY87529, AY87531, AY87533, AY87535, AY87537, AY87539,
CC AY87541, AY87543, AY87545 and AY87547 represent the precursors of
CC conotoxins #1-#14, respectively.
XX
SQ Sequence 71 AA;
OY 1 CKGTGKPCSRRIAYNCTGSCRSKC 25
ID 46 CKAAGKPCSRRIAYNCTGSCRSKC 70
XX
RESULT 11
ABB96817
ID ABB96817 standard; peptide; 25 AA.
XX
AC ABB96817;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Ay6.3 toxin sequence.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus auristiacus.
XX
PN WO200207675-A2.
XX

PD 31-JAN-2002.
XX
XX 23-JUL-2001; 2001WO-US23041.
PF
XX 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
PA (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX cardiovascular disorders -
XX
PS Claim 1(a); Page 71; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.
XX
SQ Sequence 25 AA;
Query Match 92.2%; Score 141; DB 23; Length 25;
Best Local Similarity 92.0%; Pred. No. 3.4e-09;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
OY 1 CKGTGKPCSRIRAYNCCTGSCRSKC 25
11 ||||||||||||||||||||
DB 1 CKAKGKPCSRIRAYNCCTGSCRSKC 25
RESULT 12
ABB96609 standard; Peptide; 71 AA.
ID ABB96609;
XX
XX 12-JUL-2002 (first entry)
DT
XX
DE Omega-conopeptide Ay6.3 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus aurisiacus.
XX

PN WO200207675-A2.
XX
XX 31-JAN-2002.
PD
XX 23-JUL-2001; 2001WO-US23041.
PF
XX 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
PA (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98869.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
XX cardiovascular disorders -
XX
PS Claim 1(c); Page 29; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
SQ Sequence 71 AA;
Query Match 92.2%; Score 141; DB 23; Length 71;
Best Local Similarity 92.0%; Pred. No. 8.1e-09;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
OY 1 CKGTGKPCSRIRAYNCCTGSCRSKC 25
11 ||||||||||||||||||||
DB 46 CKAKGKPCSRIRAYNCCTGSCRSKC 70
RESULT 13
ABB96870 standard; Peptide; 25 AA.
ID ABB96870;
XX
XX 12-JUL-2002 (first entry)
DT
XX
DE Omega-conopeptide Mn6.1 toxin sequence.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;

KW psychosis; anxiety; schizophrenia.
XX
OS Conus monachus.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX Claim 1(a); Page 72; 195pp; English.
PS
XX The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.
XX
XX Sequence 25 AA;
SQ
Query Match 90.8%; Score 139; DB 23; Length 25;
Best Local Similarity 92.0%; Pred. No. 5.7e-09;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
1 CKSTGKSCSRIRAYNCTGSCRSKGC 25
Db
RESULT 14
ABB96661
ID ABB96661 standard; Peptide; 71 AA.
XX
AC ABB96661;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide Mn6.1 propeptide.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;
KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;

KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus monachus.
XX
PN WO200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
XX (UTAH) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
DR N-PSDB; ABL98920.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
XX Claim 1(c); Page 53; 195pp; English.
PS
XX The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96595-ABB96697 represent omega-conopeptide propeptide
CC sequences.
XX
XX Sequence 71 AA;
SQ
Query Match 90.8%; Score 139; DB 23; Length 71;
Best Local Similarity 92.0%; Pred. No. 1.3e-08;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
46 CKSTGKSCSRIRAYNCTGSCRSKGC 70
Db
RESULT 15
ABB96763
ID ABB96763 standard; Peptide; 25 AA.
XX
AC ABB96763;
XX
DT 12-JUL-2002 (first entry)
XX
DE Omega-conopeptide M6.1 generic toxin sequence.
XX
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant;
KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;

Search completed: May 20, 2003, 15:38:24
Job time : 28.3438 secs

```
KW antimigraine; antidiabetic; tranquiliser; vulnery; antipsychotic;
KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;
KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;
KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;
KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;
KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;
KW psychosis; anxiety; schizophrenia.
XX
OS Conus magus.
XX
FH Key Location/Qualifiers
FT Misc-difference 7 /label- OTHER
FT /note- "OTHER is Pro or Hydroxy Pro"
FT
FT Misc-difference 13 /label- OTHER
FT /note- "OTHER is Tyr, 125I-Tyr, mono-iodo-Tyr or
FT di-iodo-Tyr or O-sulpho-Tyr or O-Phospho-Tyr"
XX
PN W0200207675-A2.
XX
PD 31-JAN-2002.
XX
PF 23-JUL-2001; 2001WO-US23041.
XX
PR 21-JUL-2000; 2000US-219616P.
PR 05-FEB-2001; 2001US-265888P.
XX
PA (UTAH ) UNIV UTAH RES FOUND.
PA (COGN-) COGNETIX INC.
XX
PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;
PI Jacobsen R, Jones RM, Cartier GE;
XX
DR WPI; 2002-257318/30.
XX
PT New omega-conopeptides useful for treating disorders associated with
PT voltage gated ion channels e.g. pain, inflammation, neurological or
PT cardiovascular disorders -
XX
PS Example 2; Page 52; 195pp; English.
XX
CC The invention relates to isolated omega-conopeptides, nucleic acid
CC sequences encoding them, and propeptide sequences. The activity of
CC the peptides of the invention may be described as, analgesic,
CC anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective,
CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,
CC tranquiliser, vulnery, antipsychotic, anxiolytic and neuroleptic.
CC Peptides of the invention act by modulating the activity of voltage gated
CC ion channels. They may be used for treating or preventing disorders
CC associated with voltage gated ion channels such as neurological
CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury
CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,
CC cerebrovascular accident, brain or spinal chord trauma, drowning,
CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.
CC migraine; inflammation or cardiovascular disorders. They may also be used
CC for treating psychiatric disorders e.g. psychosis, anxiety or
CC schizophrenia. The analgesic agents of the invention show diminished side
CC effects and toxicity, and are non-addictive. The sequences given in
CC records ABB96698-ABB96806 represent omega-conopeptide generic toxin
CC sequences.
XX
SQ Sequence 25 AA;
XX
Query Match 88.9%; Score 136; DB 23; Length 25;
Best Local Similarity 92.0%; Pred. No. 1.2e-08;
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
QY 1 CKGTGKPCSRIVNCTGTGCRSGKC 25
Db 1 CKGTGKXXCSRIAXNCTGTGCRSGKC 25
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GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:34:55 ; Search time 13.8021 Seconds
(without alignments)
174.130 Million cell updates/sec

Title: US-09-910-082a-375
Perfect score: 153
Sequence: 1 CKGTGKPCSRIMAYNCTGSCRSKC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	121	79.1	25	2 JH0700	omega-conotoxin MV
2	105	68.6	25	2 JH0701	omega-conotoxin MV
3	98.5	64.4	29	2 JH0699	omega-conotoxin MV
4	94	61.4	29	2 A58537	omega-conotoxin MV
5	89.5	58.5	26	2 C44379	omega-conotoxin SV
6	67.5	44.1	29	2 A43620	omega-conotoxin GV
7	67.5	44.1	29	2 B43620	omega-conotoxin GV
8	66	43.1	26	2 T28626	variant-specific s
9	61.5	40.2	73	1 NTRN6G	omega-conotoxin GV
10	61.5	40.2	909	1 ORXLL1	LDL receptor 1 pre
11	61	39.9	78	2 S12513	delta-conotoxin Tx
12	60.5	39.5	139	2 S54085	probable membrane
13	60	39.2	24	2 B44379	delta-conotoxin SV
14	60	39.2	27	2 S19619	LDL-receptor-relat
15	60	39.2	4753	1 A47437	conotoxin-like pro
16	59.5	38.9	52	2 T10299	hypotheical prote
17	59	38.6	2150	2 T32497	LDL receptor 2 pre
18	58.5	38.2	909	1 ORXLL2	hypotheical prote
19	58	37.9	816	2 C69493	glycoprotein GP330
20	57.5	37.6	1291	2 T21694	dominant autoantig
21	56	36.6	972	2 A30363	alpha-2-macroglobu
22	56	36.6	1408	2 S16148	alpha-2-macroglobu
23	56	36.6	1650	2 S53457	gp330 protein prec
24	56	36.6	4543	1 A53102	preadipocyte facto
25	56	36.6	4544	1 S02392	homeotic protein d
26	56	36.6	4660	2 T42737	hypothetical prote
27	55	35.9	385	2 A54785	
28	55	35.9	385	2 S53718	
29	54.5	35.6	176	2 T17935	

30	54	35.3	862	1 QRMSLD	LDL receptor precu
31	54	35.3	1369	2 S70713	protein-tyrosine k
32	53.5	35.0	491	2 S05408	keratin, type II,
33	53	34.6	64	2 A25775	metallothionein A
34	53	34.6	64	2 A33825	metallothionein A
35	53	34.6	621	2 I38467	low density lipopr
36	53	34.6	860	1 QRHULD	LDL receptor precu
37	52.5	34.3	72	2 S39417	metallothionein 10
38	52	34.0	4545	1 S25111	alpha-2-macroglobu
39	51.5	33.7	37	2 E44007	apoptoxin III - tr
40	51.5	33.7	65	2 A38739	metallothionein -
41	51.5	33.7	491	2 S52920	disintegrin (EC 3.
42	51.5	33.7	544	2 S52477	thrombospondin 2 p
43	51.5	33.7	1172	2 A42587	variant-specific s
44	51.5	33.7	2706	2 T28155	non-essential pili
45	51	33.3	71	2 AC3461	

ALIGNMENTS

RESULT 1
JH0700
omega-conotoxin MWIIA [validated] - cone shell (Conus magus)
C:Species: Conus magus (magus cone)
C:Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 15-Sep-2000
C:Accession: JH0700; C60133; A34115
R:Hillyard, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasdi, L.; Ramachandran, J.
Neuron 9, 69-77, 1992
A:Title: A new conus peptide ligand for mammalian presynaptic Ca2+ channels.
A:Reference number: JH0699; MUID:92337922; PMID:1352986
A:Accession: JH0700
A>Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-25 <HL>
R:Olivera, B.M.; Cruz, L.J.; de Santos, V.; Lecheminant, G.W.; Griffin, D.; Zeikus, R.
Biochemistry 26, 2086-2090, 1987
A:Title: Neuronal calcium channel antagonists. Discrimination between calcium channel
A:Reference number: A34115; MUID:87299637; PMID:2441741
A:Contents: annotation
R:Nielsen, K.J.; Thomas, L.; Lewis, R.J.; Alewood, P.F.; Craik, D.J.
submitted to the Brookhaven Protein Data Bank, August 1996
A:Reference number: A67648; PDB:1MVI
A:Contents: annotation; conformation by (1)H-NMR, residues 1-25
R:Nielsen, K.J.; Thomas, L.; Lewis, R.J.; Alewood, P.F.; Craik, D.J.
J. Mol. Biol. 263, 297-310, 1996
A:Title: A consensus structure for omega-conotoxins with different selectivities for
A:Reference number: A58619; MUID:97070382; PMID:8913308
A:Contents: annotation; conformation by (1)H-NMR
R:Kohn, T.; Kim, J.-I.; Kobayashi, K.; Kodera, Y.; Maeda, T.; Sato, K.
submitted to the Brookhaven Protein Data Bank, April 1995
A:Reference number: A66296; PDB:1OMG
A:Contents: annotation; conformation by (1)H-NMR, residues 1-25
R:Kohn, T.; Kim, J.-I.; Kobayashi, K.; Kodera, Y.; Maeda, T.; Sato, K.
Biochemistry 34, 10256-10265, 1995
A:Title: Three-dimensional structure in solution of the calcium channel blocker omega
A:Reference number: A58627; MUID:95367555; PMID:7640281
A:Contents: annotation; conformation by (1)H-NMR
C:Superfamily: omega-conotoxin
C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel
F:1-16,8-20,15-25/Disulfide bonds: #status predicted
F:25/Modified site: amidated carboxyl end (Cys) #status experimental
Query Match 79.1%; Score 121; DB 2; Length 25;
Best local Similarity 76.0%; Pred. No. 2.6e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

Query Match 58.5%; Score 89.5; DB 2; Length 26;
Best Local Similarity 57.7%; Pred. No. 0.00087;
Matches 15; Conservative 5; Mismatches 5; Indels 1; Gaps 1;

OY 1 CKGTGKPCSRIRAYNCCCTGSC--RSGKC 25
||| | : ||| ||| ||| |||
Db 1 CKLKGQSCRKTSYDCCSGSGCRSGKC 26

RESULT 6

A43620

omega-conotoxin GVIIA - cone shell (Conus geographus)
N;Alternate names: shaker peptide GVIIA
C;Species: Conus geographus (geography cone)
C;Date: 11-Dec-1992 #sequence_revision 11-Dec-1992 #text_change 23-May-1997
C;Accession: A43620
R;Olivera, B.M.; Gray, W.R.; Zelkus, R.; McIntosh, J.M.; Varga, J.; Rivier, J.; de Santis
Science 230, 1338-1343, 1985
A;Title: Peptide neurotoxins from fish-hunting cone snails.
A;Reference number: A43620; MUID:86070213; PMID:4071055
A;Accession: A43620
A;Molecule type: protein
A;Residues: 1-29 <OLI>
C;Superfamily: omega-conotoxin

C;Keywords: acetylcholine release inhibition; calcium channel inhibitor; hydroxyproline;
F;1-16,8-19,15-26/Disulfide bonds: #status predicted
F;4,7/Modified site: 4-hydroxyproline (Pro) #status experimental

Query Match 44.1%; Score 67.5; DB 2; Length 29;
Best Local Similarity 55.6%; Pred. No. 0.26;
Matches 15; Conservative 1; Mismatches 8; Indels 3; Gaps 2;

OY 1 CKGTGKPCSRIRAYNCCCTGSC--RSGKC 25
||| | : ||| ||| ||| |||
Db 1 CKSPGTPCSRGRMDCCCT-SCLLYSNKC 26

RESULT 7

B43620

omega-conotoxin GVIIA - cone shell (Conus geographus)
N;Alternate names: shaker peptide GVIIA
C;Species: Conus geographus (geography cone)
C;Date: 11-Dec-1992 #sequence_revision 11-Dec-1992 #text_change 23-May-1997
C;Accession: B43620
R;Olivera, B.M.; Gray, W.R.; Zelkus, R.; McIntosh, J.M.; Varga, J.; Rivier, J.; de Santis
Science 230, 1338-1343, 1985
A;Title: Peptide neurotoxins from fish-hunting cone snails.
A;Reference number: A43620; MUID:86070213; PMID:4071055
A;Accession: B43620
A;Molecule type: protein
A;Residues: 1-29 <OLI>

C;Superfamily: omega-conotoxin
C;Keywords: acetylcholine release inhibition; calcium channel inhibitor; hydroxyproline;
F;1-16,8-19,15-26/Disulfide bonds: #status predicted
F;4,7/Modified site: 4-hydroxyproline (Pro) #status experimental

Query Match 44.1%; Score 67.5; DB 2; Length 29;
Best Local Similarity 55.6%; Pred. No. 0.26;
Matches 15; Conservative 1; Mismatches 8; Indels 3; Gaps 2;

OY 1 CKGTGKPCSRIRAYNCCCTGSC--RSGKC 25
||| | : ||| ||| ||| |||
Db 1 CKSPGTPCSRGRMDCCCT-SCLLYSNKC 26

RESULT 8

T28626

variant-specific surface protein 2 - malaria parasite (Plasmodium falciparum)
C;Species: Plasmodium falciparum
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jun-2000
C;Accession: T28626
R;Su, X.Z.; Heatwole, V.M.; Wertheimer, S.P.; Guinet, F.; Herrfeldt, J.A.; Peterson, D.S.

Cell 82, 89-100, 1995
A;Title: The large diverse gene family var encodes proteins involved in cytoadherence
A;Reference number: Z20487; MUID:95330813; PMID:7606788
A;Accession: T28626

A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: DNA
A;Residues: 1-2664 <SUX>
A;Cross-references: EMBL:L40609; NID:g886376; PID:g886378; PIDN:AAA75398.1
C;Genetics:
A;Introns: 2197/3
A;Note: var-2

Query Match 43.1%; Score 66; DB 2; Length 2664;
Best Local Similarity 50.0%; Pred. No. 6.3;
Matches 13; Conservative 1; Mismatches 6; Indels 6; Gaps 1;

OY 6 KPCSRIAYNCCCTGSCRS-----KC 25
||| | : ||| ||| ||| |||
Db 1805 KPCSSEKINCRNNGCRSGDPTKEKC 1830

RESULT 9

NTKN6G

omega-conotoxin GVIB precursor [validated] - cone shell (Conus geographus)
N;Alternate names: shaker peptide GVIB
N;Contains: omega-conotoxin GVIA; omega-conotoxin GVIC
C;Species: Conus geographus (geography cone)
C;Date: 25-Feb-1985 #sequence_revision 23-Mar-1995 #text_change 15-Sep-2000
C;Accession: A44006; A60133; B60133; A01785
R;Colledge, C.J.; Hunsperger, J.P.; Imperial, J.S.; Hillyard, D.R.
Toxicol 30, 1111-1116, 1992
A;Title: Precursor structure of omega-conotoxin GVIA determined from a cDNA clone.
A;Reference number: A44006; MUID:93069266; PMID:1440648
A;Accession: A44006
A;Molecule type: mRNA
A;Residues: 1-73 <COL>

A;Cross-references: GB:M84612; NID:g156520; PIDN:AAA81590.1; PID:g1070393
A;Experimental source: venom duct
A;Note: sequence extracted from NCBI backbone (NCBIN:119531, NCBIPI:119532)
R;Olivera, B.M.; Gray, W.R.; Zelkus, R.; McIntosh, J.M.; Varga, J.; Rivier, J.; de Sa
Science 230, 1338-1343, 1985

A;Title: Peptide neurotoxins from fish-hunting cone snails.
A;Reference number: A43620; MUID:86070213; PMID:4071055
A;Accession: A60133
A;Molecule type: protein
A;Residues: 46-73 <OLI>
A;Accession: B60133
A;Molecule type: protein
A;Residues: 46-71 <OL2>

R;Olivera, B.M.; McIntosh, J.M.; Cruz, L.J.; Luque, F.A.; Gray, W.R.
Biochemistry 23, 5087-5090, 1984
A;Title: Purification and sequence of a presynaptic peptide toxin from Conus geographus
A;Reference number: A01785; MUID:85072796; PMID:6509012
A;Accession: A01785
A;Molecule type: protein
A;Residues: 46-72 <OL3>

R;Nishituchi, Y.; Kumagaya, K.; Noda, Y.; Watanabe, T.X.; Sakakibara, S.
Biopolymers 25, S61-S68, 1986
A;Title: Synthesis and secondary-structure determination of omega-conotoxin GVIA: a 2
A;Reference number: A49017; MUID:87049928; PMID:3779030
A;Contents: annotation

A;Note: disulfide bonds determined and confirmed by chemical synthesis
R;Davis, J.H.; Bradley, E.K.; Miljanich, G.P.; Nadasdt, L.; Ramachandran, J.; Basus,
submitted to the Brookhaven Protein Data Bank, April 1993
A;Reference number: A51894; PDB:1OMC
A;Contents: annotation; conformation by (1)H-NMR, residues 46-72
Biochemistry 32, 7396-7405, 1993

A;Title: Solution structure of omega-conotoxin GVIA using 2-D NMR spectroscopy and re
A;Reference number: A58536; MUID:93332945; PMID:8338837
A;Contents: annotation; conformation by (1)H-NMR
R;Pallaghy, P.K.; Dugan, B.M.; Pennington, M.W.; Norton, R.S.
submitted to the Brookhaven Protein Data Bank, August 1993

A:Reference number: A51089; PDB:1CCO
 A:Contents: annotation; conformation by (1)H-NMR, residues 46-72
 C:Comment: There are several types of conotoxins: alpha, acting on postsynaptic membrane neurotoxin.
 C:Superfamily: omega-conotoxin
 C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel inh
 F:1-22/Domain: signal sequence #status predicted <SIG>
 F:23-45/Domain: propeptide #status predicted <PRO>
 F:46-73/Product: omega-conotoxin GVIB #status experimental <MAT1>
 F:46-72/Product: omega-conotoxin GVIA #status experimental <MAT2>
 F:46-71/Product: omega-conotoxin GVIC #status experimental <MAT3>
 F:46-61,53-64,60-71/Disulfide bonds: #status experimental
 F:49,55,66/Modified site: 4-hydroxyproline (Pro) #status experimental
 F:72/Modified site: amidated carboxyl end (Tyr) (amide in mature form from following gly

Query Match 40.2%; Score 61.5; DB 1; Length 73;
 Best Local Similarity 55.0%; Pred. No. 2.2;
 Matches 11; Conservative 1; Mismatches 7; Indels 1; Gaps 1;

QY 1 CKGTGKPCSRIVNCTGSC 20
 Db 46 CKSPGSSCSPTSYNCCR-SC 64

RESULT 10

ORXLL1

LDL receptor 1 precursor - African clawed frog
 C:Species: Xenopus laevis (African clawed frog)

C>Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 18-Sep-1998
 C:Accession: A40388

R.Mehta, K.D.; Chen, W.J.; Goldstein, J.L.; Brown, M.S.
 J. Biol. Chem. 266, 10406-10414, 1991

A:Title: The low density lipoprotein receptor in Xenopus laevis. Five domains that reser
 A:Reference number: A40388; MUID:91244815; PMID:1709931
 A:Accession: A40388

A:Molecule type: mRNA
 A:Residues: 1-909 <MEH>

A:Cross-references: GB:M62976

C:Comment: This transmembrane glycoprotein binds LDL, the major cholesterol-carrying lip
 nd complexes must first cluster into clathrin-coated pits.
 C:Superfamily: LDL receptor; EGF homology; LDL receptor ligand-binding repeat homology;
 C:Keywords: cholesterol; coated pits; duplication; endocytosis; glycoprotein; LDL; lipid

F:1-21/Domain: signal sequence #status predicted <SIG>
 F:22-909/Product: LDL receptor #status predicted <MAT>
 F:22-836/Domain: extracellular #status predicted <EXT>
 F:27-63/Domain: LDL receptor ligand-binding repeat homology <LDL1>
 F:68-104/Domain: LDL receptor ligand-binding repeat homology <LDL2>
 F:109-143/Domain: LDL receptor ligand-binding repeat homology <LDL3>
 F:148-183/Domain: LDL receptor ligand-binding repeat homology <LDL4>
 F:195-229/Domain: LDL receptor ligand-binding repeat homology <LDL5>
 F:234-268/Domain: LDL receptor ligand-binding repeat homology <LDL6>
 F:274-311/Domain: LDL receptor ligand-binding repeat homology <LDL7>
 F:316-350/Domain: EGF homology <EG1>
 F:356-390/Domain: EGF homology <EG2>
 F:397-436/Domain: LDL receptor YWTD-containing repeat homology <YW1>
 F:437-483/Domain: LDL receptor YWTD-containing repeat homology <YW2>
 F:484-526/Domain: LDL receptor YWTD-containing repeat homology <YW3>
 F:527-570/Domain: LDL receptor YWTD-containing repeat homology <YW4>
 F:571-613/Domain: LDL receptor YWTD-containing repeat homology <YW5>
 F:614-656/Domain: LDL receptor YWTD-containing repeat homology <YW6>
 F:665-709/Domain: EGF homology <EG3>
 F:717-813/Region: clustered O-linked oligosaccharides
 F:837-858/Domain: transmembrane #status predicted <TM1>
 F:859-909/Domain: intracellular #status predicted <INT>
 F:873-877/Region: coated-pit mediated internalization signal
 F:886-898/Region: basolateral targeting signal
 F:97,270,459/Binding site: carbohydrate (Asn) (covalent) #status predicted
 F:316-327,323-336,338-350,356-366,362-375,377-390,665-679,675-694,696-709/Disulfide bond

Query Match 40.2%; Score 61.5; DB 1; Length 909;
 Best Local Similarity 40.6%; Pred. No. 10;
 Matches 13; Conservative 5; Mismatches 7; Indels 7; Gaps 2;

QY 1 CKG-----TKGPCSRIVNCTGSC--RSQKC 25
 Db 183 CEGREPIKTDKPCSPLEFHGSGECIHMSWK 214

RESULT 11

S12513

delta-conotoxin TxVIA precursor - cone shell (Conus textile)

N:Alternate names: conotoxin IA; King-Kong peptide (KK-0)

C:Species: Conus textile (cloth-of-gold cone)

C>Date: 19-Mar-1997 #sequence_revision 11-Apr-1997 #text_change 16-Jul-1999
 C:Accession: S12513; A30103; S19553

R:Woodward, S.R.; Cruz, L.J.; Olivera, B.M.; Hillyard, D.R.
 EMBO J. 9, 1015-1020, 1990

A:Title: Constant and hypervariable regions in conotoxin propeptides.
 A:Reference number: S12513; MUID:90214607; PMID:1691090

A:Accession: S12513
 A:Molecule type: mRNA

A:Residues: 1-78 <WOO>

A:Cross-references: EMBL:X53283; NID:g10887; PIDN:CA37377.1; PID:g10888
 R:Hillyard, D.R.; Olivera, B.M.; Woodward, S.; Corpuz, G.P.; Gray, W.R.; Ramiljo, C.A.

Biochemistry 28, 358-361, 1989

A:Title: A molluscivorous Conus toxin: conserved frameworks in conotoxins.
 A:Reference number: A30103; MUID:89207553; PMID:2706261

A:Accession: A30103
 A:Molecule type: protein

A:Residues: 52-78 <HIL>

R:Fainzilber, M.; Gordon, D.; Hasson, A.; Spira, M.E.; Zlotkin, E.
 Eur. J. Biochem. 202, 589-595, 1991

A:Title: Mollusc-specific toxins from the venom of Conus textile neovivarius.
 A:Reference number: S19553; MUID:92104183; PMID:1761058

A:Accession: S19553
 A:Molecule type: protein

A:Residues: 52-78 <FAI>

C:Superfamily: omega-conotoxin
 C:Keywords: neurotoxin; sodium channel inhibitor; venom

F:1-22/Domain: signal sequence #status predicted <SIG>

F:23-51/Domain: propeptide #status predicted <PRO>

F:52-78/Product: delta-conotoxin TxVIA #status experimental <MAT>
 F:53-68,60-72,67-77/Disulfide bonds: #status predicted

Query Match 39.9%; Score 61; DB 2; Length 78;
 Best Local Similarity 45.0%; Pred. No. 2.6;
 Matches 9; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIVNCTGSC 20
 Db 53 CKQSGEMCNLDQNCDDGYC 72

RESULT 12

S54085

probable membrane protein YPR064w - yeast (Saccharomyces cerevisiae)

N:Alternate names: hypothetical protein YP9499.19

C:Species: Saccharomyces cerevisiae
 C>Date: 08-Jul-1995 #sequence_revision 19-Oct-1995 #text_change 19-Apr-2002

C:Accession: S54085
 R:Badcock, K.; Churcher, C.M.

submitted to the EMBL Data Library, May 1995
 A:Reference number: S54059
 A:Accession: S54085

A:Molecule type: DNA
 A:Residues: 1-139 <BAD>

A:Cross-references: EMBL:Z4219; NID:g805025; PID:g805044; GSPDB:GN00016; MIPS:YPR064

A:Experimental source: strain AB972
 C:Genetics:

A:Gene: MIPS:YPR064w
 A:Cross-references: SGD:S0006268

A:Map position: 16R

C:Superfamily: Saccharomyces cerevisiae probable membrane protein YPR064w
 C:Keywords: transmembrane protein

F:39-55/Domain: transmembrane #status predicted <TM1>
 F:123-139/Domain: transmembrane #status predicted <TM2>

Wed May 21 08:22:54 2003

us-09-910-082a-375.rpr

F:4092-4130/Domain: EGF homology <EGF2>
F:4343-4386/Domain: LDL receptor YWTD-containing repeat homology <YW38>

Query Match 39.2%; Score 60; DB 1; Length 4753;
Best Local Similarity 43.5%; Pred. No. 42;
Matches 10; Conservative 2; Mismatches 11; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIRAYNCCTGSCRS 23
| | | : | | |
Db 3871 CGGTRPCSESEFRNCNDGKCIPG 3893

Search completed: May 20, 2003, 15:41:53
Job time : 14.8021 secs

GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:23:35 ; Search time 7.29167 Seconds
(without alignments)
142.205 Million cell updates/sec

Title: US-09-910-082A-375
Perfect score: 153
Sequence: 1 CKGTGKPCSRIRAYNCCTGSCRSRGC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues
Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	142	92.8	71	1 CXO3_CONST	O9xzk2 conus stria
2	121	79.1	71	1 CXOA_CONMA	P05484 conus magus
3	112	73.2	71	1 CXOA_CONCT	P58917 conus catus
4	105	68.6	25	1 CXOB_CONMA	P05485 conus magus
5	104.5	68.3	26	1 CXOC_CONCT	P58919 conus catus
6	101	66.0	25	1 CXOB_CONCT	P58918 conus catus
7	99	64.7	27	1 CXO7_CONCN	P58916 conus conso
8	98.5	64.4	29	1 CXOC_CONMA	P37300 conus magus
9	94	61.4	29	1 CXOD_CONMA	Q26350 conus magus
10	89.5	58.5	72	1 CXOB_CONST	P28881 conus stria
11	84	54.9	73	1 CXOD_CONCT	P58920 conus catus
12	69.5	45.4	27	1 CXO6_CONRA	P58914 conus radia
13	67.5	44.1	29	1 CXO7_CONGE	P05483 conus geogr
14	62.5	40.8	26	1 CXO7_CONTE	P56714 conus texti
15	61.5	40.2	73	1 CXO6_CONGE	P01522 conus geogr
16	61.5	40.2	909	1 LDL1_XENLA	Q99087 xenopus lae
17	61	39.9	78	1 CXDA_CONTE	P18511 conus texti
18	60	39.2	27	1 CXDB_CONTE	P24159 conus texti
19	60	39.2	72	1 CXOA_CONST	P28880 conus stria
20	60	39.2	4753	1 LRP_CAEEL	Q04833 caenorhabdi
21	59.5	38.9	26	1 CXO6_CONTU	P58915 conus tulip
22	59.5	38.9	52	1 CTL2_NPVOP	O10286 oryza pseu
23	59	38.6	72	1 CXO2_CONST	Q9x215 conus stria
24	58.5	38.2	892	1 LDL2_XENLA	Q99088 xenopus lae
25	58	37.9	72	1 CXO1_CONST	Q9x214 conus stria
26	57.5	37.6	1291	1 YC81_CAEEL	Q19981 caenorhabdi
27	56.5	36.9	37	1 TXOF_HADVE	P81599 hadronycha
28	56	36.6	1408	1 SERR_DROME	P18168 drosophila
29	56	36.6	4543	1 LRP1_CHICK	P98157 gallus gall
30	56	36.6	4544	1 LRP1_HUMAN	Q07954 homo sapien
31	56	36.6	4660	1 LRP2_RAT	P98158 rattus norv
32	55	35.9	385	1 DLK_MOUSE	Q09163 mus musculu
33	54	35.3	864	1 LDLR_MOUSE	P35951 mus musculu

34	53.5	35.0	491	1 K2M2_SHEEP	P15241 ovis aries
35	53	34.6	64	1 MTA_STRPU	P04734 strongyloce
36	53	34.6	860	1 LDLR_HUMAN	P01130 homo sapien
37	53	34.6	4655	1 LRP2_HUMAN	P98164 homo sapien
38	52.5	34.3	72	1 MT12_MTED	P80247 mytilus edu
39	52	34.0	245	1 CRS3_HORSE	O19010 equus cabal
40	51.5	33.7	37	1 TXP3_APTSC	P49268 aptostichus
41	51.5	33.7	65	1 MTB_STRPU	Q27287 strongyloce
42	51.5	33.7	1172	1 TSP2_MOUSE	Q03350 mus musculu
43	51	33.3	77	1 CXK1_CONTE	P18512 conus texti
44	51	33.3	212	1 AGI_HORVU	P15312 hordeum vul
45	51	33.3	615	1 FA12_HUMAN	P00748 homo sapien

ALIGNMENTS

RESULT 1	ID	CXO3_CONST	STANDARD	PRT	71 AA.
AC	O9xzk2				
DT	16-OCT-2001 (Rel. 40, Created)				
DT	16-OCT-2001 (Rel. 40, Last sequence update)				
DT	15-JUN-2002 (Rel. 41, Last annotation update)				
DE	Omega-type conotoxin SO3 precursor.				
GN	SO3.				
OS	Conus striatus (Striated cone).				
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;				
OC	Neogastropoda; Conoidea; Conidae; Conus.				
OX	NCBI_TaxID=6493;				
RN	[1]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE-Venom duct;				
RX	MEDLINE-20037955; PubMed-10573284;				
RA	Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;				
RT	"Conopeptides from Conus striatus and Conus textile by cDNA				
RT	cloning."				
RL	Peptides 20:1139-1144(1999).				
CC	-1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind				
CC	and block voltage-sensitive calcium channels (VSCC) (By				
CC	similarity).				
CC	-1- SUBCELLULAR LOCATION: Secreted (By similarity).				
CC	-1- TISSUE SPECIFICITY: Expressed by the venom duct.				
CC	-1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE				
CC	FAMILY.				
CC	-----				
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration				
CC	between the Swiss Institute of Bioinformatics and the EMBL outstation -				
CC	the European Bioinformatics Institute. There are no restrictions on its				
CC	use by non-profit institutions as long as its content is in no way				
CC	modified and this statement is not removed. Usage by and for commercial				
CC	entities requires a license agreement (See http://www.isb-sib.ch/announce/				
CC	or send an email to license@isb-sib.ch).				
CC	-----				
DR	EMBL; AF146348; AAD31908.1; -				
DR	HSSP; P05484; 1MVI.				
DR	InterPro; IPR004214; Conotoxin.				
DR	Pfam; PF02950; Conotoxin; 1.				
KW	Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;				
KW	Signal; Amidation.				
KW	SIGNAL	1	22	POTENTIAL.	
FT	PROPEP	23	44	POTENTIAL.	
FT	PEPTIDE	45	70	OMEGA-TYPE CONOTOXIN SO3.	
FT	DISULFID	46	61	BY SIMILARITY.	
FT	DISULFID	53	65	BY SIMILARITY.	
FT	DISULFID	60	70	BY SIMILARITY.	
FT	MOD_RES	70	70	AMIDATION (G-71 PROVIDE AMIDE GROUP)	
FT				(POTENTIAL).	
SO	SEQUENCE	71 AA;	7628 MW;	CE7070DCE3094D73 CRC64;	
Query Match 92.8%; Score 142; DB 1; Length 71;					
Best Local Similarity 92.0%; Pred. No. 7.2e-11;					
Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;					

OY 1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
DB 46 CKAGKPCSRIRAYNCTGSCRSKGC 70

RESULT 2

CXOA_CONMA STANDARD; PRT; 71 AA.
ID CXOA_CONMA
AC P05484;
DT 01-NOV-1988 (Rel. 09, Created)
DT 15-JUN-2002 (Rel. 41, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin MVIIA precursor (SNX-111) (Ziconotide).
OS Conus magus (Magus cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6492;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-Venom duct;
RX PubMed-10938268;
RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,
RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,
RA Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;
RT "Novel omega-conotoxins from Conus catus discriminate among neuronal
RT calcium channel subtypes";
RL J. Biol. Chem. 275:35335-35344(2000).
RN [2]
RP SEQUENCE OF 46-70.
RX MEDLINE=86070213; PubMed-4071055;
RA Olivera B.M., Cruz L.J., de Santos V., Lecheminant G.W., Griffin D.,
RA Zeikus R.D., McIntosh J.M., Galyean R., Varga J., Gray W.R.,
RA Rivier J.E.;
RT "Neuronal calcium channel antagonists. Discrimination between calcium
RT channel subtypes using omega-conotoxin from Conus magus venom.";
RL Biochemistry 26:2086-2090(1987).
RN [4]
RP DISULFIDE BONDS.
RX PubMed-8537186;
RA Chung D., Gaur S., Bell J.R., Ramachandran J., Nadasdi L.;
RT "Determination of disulfide bridge pattern in omega-conopeptides.";
RL Int. J. Pept. Protein Res. 46:320-325(1995).
RN [5]
RP SYNTHESIS, AND MUTAGENESIS OF LYS-47 AND TYR-58.
RX PubMed-7826361;
RA Kim J.I., Takahashi M., Ohtake A., Wakamiya A., Sato K.;
RT "Tyr13 is essential for the activity of omega-conotoxin MVIIA and
RT GVIA, specific N-type calcium channel blockers.";
RL Biochem. Biophys. Res. Commun. 206:449-454(1995).
RN [6]
RP STRUCTURE BY NMR.
RX MEDLINE=95367555; PubMed-7640281;
RA Kohno T., Kim J.-I., Kobayashi K., Kodera Y., Maeda T., Sato K.;
RT "Three-dimensional structure in solution of the calcium channel
RT blocker omega-conotoxin MVIIA";
RL Biochemistry 34:10256-10265(1995).
RN [7]
RP STRUCTURE BY NMR.
RX PubMed-7656969;
RA Basus V.J., Nadasdi L., Ramachandran J., Miljanich G.P.;
RT "Solution structure of omega-conotoxin MVIIA using 2D NMR
RT spectroscopy.";
RL FEBS Lett. 370:163-169(1995).
RN [8]
RP STRUCTURE BY NMR.

RX MEDLINE=97070382; PubMed-8913308;
RA Nielsen K.J., Thomas L., Lewis R.J., Alewood P.F., Craik D.J.;
RT "A consensus structure for omega-conotoxins with different
RT selectivities for voltage-sensitive calcium channel subtypes:
RT comparison of MVIIA, SVIB and SNX-202.";
RL J. Mol. Biol. 263:297-310(1996).
RN [9]
RP STRUCTURE BY NMR.
RX PubMed-10373375;
RA Nielsen K.J., Adams D., Thomas L., Bond T., Alewood P.F., Craik D.J.,
RA Lewis R.J.;
RT "Structure-activity relationships of omega-conotoxins MVIIA, MVIIIC and
RT 14 loop splice hybrids at N and P/Q-type calcium channels.";
RL J. Mol. Biol. 289:1405-1421(1999).

RN [10]
RP STRUCTURE BY NMR.
RX PubMed-10747778;
RA Atkinson R.A., Kieffer B., Dejaegere A., Strockin F., Lefevre J.-F.;
RT "Structural and dynamic characterization of omega-conotoxin MVIIA: the
RT binding loop exhibits slow conformational exchange.";
RL Biochemistry 39:3908-3919(2000).
RN [11]
RP STRUCTURE BY NMR.
RX MEDLINE=21243158; PubMed-11344322;
RA Goldenberg D.P., Koehn R.E., Gilbert D.E., Wagner G.;
RT "Solution structure and backbone dynamics of an omega-conotoxin
RT precursor";
RL Protein Sci. 10:538-550(2001).
RN [12]
RP FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
RX and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks N-type calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- PHARMACEUTICAL: Is under clinical trial by Neurax. It blocks acute
CC pain in patients who no longer obtain relief from opiate drugs. It
CC is 100 to 1000 times more potent than morphine. By blocking
CC calcium channels it disable nerves that transmit pain signals.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
CC -1- DATABASE: NAME-Ziconotide Source; NOTE-Web site on ziconotide;
CC WWW="http://docmd.com/ziconotide/".
CC PIR: C60133; C60133.
DR PIR: JH0700; JH0700.
DR PDB: 1OMG; 03-APR-96.
DR PDB: 1MVI; 12-AUG-97.
DR PDB: 1DW4; 01-MAR-00.
DR PDB: 1DW5; 01-MAR-00.
DR PDB: 1FEO; 23-AUG-00.
DR Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation; Signal; 3D-structure; Pharmaceutical.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 45
FT PEPTIDE 46 70 OMEGA-CONOTOXIN MVIIA.
FT DISULFID 46 61
FT DISULFID 53 65
FT DISULFID 60 70
FT MOD_RES 70 70
FT MUTAGEN 47 47
FT MUTAGEN 58 58
FT SEQUENCE 71 AA; 7587 MW; E2A32725C81AF31D CRC64;
SQ
Query Match 79.1%; Score 121; DB 1; Length 71;
Best Local Similarity 76.0%; Pred. No. 2.3e-08;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

RESULT 3
CXOA_CONCT STANDARD; PRT; 71 AA.
ID CXOA_CONCT

OY 1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
DB 46 CKGKAGKCSRLMYDCTGSCRSKGC 70

```

AC P58917;
DT 15-JUN-2002 (Rel. 41, Created)
DT 15-JUN-2002 (Rel. 41, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin CVIA precursor.
OS Conus catus (Cat cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE FROM N.A., SEQUENCE OF 46-70, AND SYNTHESIS.
RC TISSUE-Venom duct, and Venom;
RX PubMed=10938268;
RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,
RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,
RA Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;
RT "Novel omega-conotoxins from Conus catus discriminate among neuronal
RT calcium channel subtypes.";
RL J. Biol. Chem. 275:35335-35344(2000).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC) (By
CC similarity). This toxin blocks N-type calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation; Signal.
FT SIGNAL 1 22 POTENTIAL.
FT PROPEP 23 45
FT PEPTIDE 46 70 OMEGA-CONOTOXIN CVIA.
FT DISULFID 46 61 BY SIMILARITY.
FT DISULFID 53 65 BY SIMILARITY.
FT DISULFID 60 70 BY SIMILARITY.
FT MOD_RES 70 70
SQ SEQUENCE 71 AA; 7665 MW; B99D9C7C74996D01 CRC64;

Query Match 73.2%; Score 112; DB 1; Length 71;
Best Local Similarity 68.0%; Pred. No. 2.7e-07;
Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25
Db 46 CKSTGASCRTSYDCTGSCRSRSGKC 70

RESULT 4
CXOB_CONMA STANDARD; PRT; 25 AA.
ID CXOB_CONMA
AC P05485;
DT 01-NOV-1988 (Rel. 09, Created)
DT 01-NOV-1988 (Rel. 09, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin MWIIB (SNX-159).
OS Conus magus (Magus cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6492;
RN [1]
RP SEQUENCE.
RX MEDLINE=87299637; PubMed=2441741;
RA Olivera B.M., Cruz L.J., de Santos V., Lecheminant G.W., Griffin D.,
RA zeikus R.D., McIntosh J.M., Galyean R., Varga J., Gray W.R.,
RA Rivier J.E.;
RT "Neuronal calcium channel antagonists. Discrimination between calcium
RT channel subtypes using omega-conotoxin from Conus magus venom.";
RL Biochemistry 26:2086-2090(1987).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.

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DR PIR; B34115; B34115.
DR PIR; JH0701; JH0701.
DR HSSP; P05484; 1MVI.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation.
FT DISULFID 1 16
FT DISULFID 8 20
FT DISULFID 15 25
FT MOD_RES 25 25
SQ SEQUENCE 25 AA; 2626 MW; E4B9CE5EFAA3734D CRC64;

Query Match 68.6%; Score 105; DB 1; Length 25;
Best Local Similarity 64.0%; Pred. No. 8.4e-07;
Matches 16; Conservative 2; Mismatches 7; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIRAYNCTGSCRSRSGKC 25
Db 1 CKKGASCHRTSYDCTGSCNRGKC 25

RESULT 5
CXOB_CONCT STANDARD; PRT; 26 AA.
ID CXOB_CONCT
AC P58919;
DT 15-JUN-2002 (Rel. 41, Created)
DT 15-JUN-2002 (Rel. 41, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin CVIC.
OS Conus catus (Cat cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE, AND SYNTHESIS.
RC TISSUE-Venom;
RX PubMed=10938268;
RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,
RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,
RA Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;
RT "Novel omega-conotoxins from Conus catus discriminate among neuronal
RT calcium channel subtypes.";
RL J. Biol. Chem. 275:35335-35344(2000).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC) (By
CC similarity). This toxin blocks N-, P-, and Q-type calcium
CC channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation.
FT DISULFID 1 16 BY SIMILARITY.
FT DISULFID 8 20 BY SIMILARITY.
FT DISULFID 15 26 BY SIMILARITY.
FT MOD_RES 26 26
SQ SEQUENCE 26 AA; 2790 MW; 56EFC382335C4A8B CRC64;

Query Match 68.3%; Score 104.5; DB 1; Length 26;
Best Local Similarity 65.4%; Pred. No. 9.9e-07;
Matches 17; Conservative 4; Mismatches 4; Indels 1; Gaps 1;

QY 1 CKGTGKPCSRIRAYNCTGSC-RSGKC 25
Db 1 CKKGQSCSKIMYDCCTGSCSRRGKC 26

RESULT 6
CXOB_CONCT STANDARD; PRT; 25 AA.
ID CXOB_CONCT
AC P58918;
DT 15-JUN-2002 (Rel. 41, Created)
DT 15-JUN-2002 (Rel. 41, Last sequence update)

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DT 15-JUN-2002 (Rel. 41, last annotation update)
DE Omega-conotoxin CVIB.
OS Conus catus (Cat cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101291;
RN [1]
RP SEQUENCE, AND SYNTHESIS.
RC TISSUE=Venom;
RX PubMed=10938268;
RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,
RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,
RA Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;
RT "Novel omega-conotoxins from Conus catus discriminate among neuronal
RT calcium channel subtypes."
RL J. Biol. Chem. 275:35335-35344(2000).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC) (By
CC similarity). This toxin blocks N-, P-, and Q-type calcium
CC channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
CC Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation.
FT DISULFID 1 16 BY SIMILARITY:
FT DISULFID 8 20 BY SIMILARITY.
FT DISULFID 15 25 BY SIMILARITY.
FT MOD_RES 25 25 AMIDATION.
SQ SEQUENCE 25 AA; 2717 MW; D41A9E5F5AFA9552 CRC64;

Query Match 66.0%; Score 101; DB 1; Length 25;
Best Local Similarity 60.0%; Pred. No. 2.5e-06;
Matches 15; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIRAYNCTGSCRSKC 25
Db 1 CKGKGASCRKTMVDCRCRSGRC 25

RESULT 7
CXOC_CONCN STANDARD; PRT; 27 AA.
AC P58916;
DT 15-JUN-2002 (Rel. 41, Created)
DT 15-JUN-2002 (Rel. 41, last sequence update)
DT 15-JUN-2002 (Rel. 41, last annotation update)
DE Omega-conotoxin CnVITA.
OS Conus consors (Singed cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=101297;
RN [1]
RP SEQUENCE, SYNTHESIS, AND MASS SPECTROMETRY.
RC TISSUE=Venom;
RX PubMed=11724570;
RA Favreau P., Gilles N., Lamthanh H., Bournaud R., Shimahara T.,
RA Bouet F., Laboute P., Letourneux Y., Menez A., Molgo J., Le Gall F.;
RT "A new omega-conotoxin that targets N-type voltage-sensitive calcium
RT channels with unusual specificity."
RL Biochemistry 40:14567-14575(2001).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks N-type calcium channels, but unexpectedly, does not show
CC any blocking activity at amphibian neuromuscular junction. Causes
CC shaking activity, and, at higher doses, causes mild tremors when
CC injected intracerebroventricularly into mice. Causes paralysis,
CC and, at higher doses, causes death when injected intramuscularly
CC into fish.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- MASS SPECTROMETRY: MW=2847.74; METHOD=Electrospray.

CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
CC Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Hydroxylation; Amidation.
FT BINDING 13 13 ESSENTIAL FOR CALCIUM CHANNEL BINDING (BY
FT SIMILARITY).
FT DISULFID 1 16 BY SIMILARITY.
FT DISULFID 8 20 BY SIMILARITY.
FT DISULFID 15 27 BY SIMILARITY.
FT MOD_RES 7 7 HYDROXYLATION.
FT MOD_RES 27 27 AMIDATION.
SQ SEQUENCE 27 AA; 2839 MW; B9DEFD1491F2CB4A CRC64;

Query Match 64.7%; Score 99; DB 1; Length 27;
Best Local Similarity 59.3%; Pred. No. 4.6e-06;
Matches 16; Conservative 4; Mismatches 5; Indels 2; Gaps 1;

OY 1 CKGTGKPCSRIRAYNCTGSCRS--GKC 25
Db 1 CKGKGAPCTRIMVDCCHGSCSSSKGRC 27

RESULT 8
CXOC_CONCN STANDARD; PRT; 29 AA.
AC P37300;
DT 01-OCT-1994 (Rel. 30, Created)
DT 01-OCT-1994 (Rel. 30, last sequence update)
DT 15-JUN-2002 (Rel. 41, last annotation update)
DE Omega-conotoxin MVIC precursor (SNX-230) (Fragment).
OS Conus magus (Magus cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6492;
RN [1]
RP SEQUENCE FROM N.A., AND SYNTHESIS.
RX MEDLINE=92337922; PubMed=1352986;
RA Hillyard D.R., Monje V.D., Mintz I.M., Bean B.P., Nadasdi L.,
RA Ramachandran J., Miljanich G.P., Azimi-Zoonooz A., McIntosh J.M.,
RA Cruz L.J., Imperial J.S., Olivera B.M.;
RT "A new Conus peptide ligand for mammalian presynaptic Ca2+ channels."
RL Neuron 9:69-77(1992).
RN [2]
RP STRUCTURE BY NMR.
RX MEDLINE=95248539; PubMed=7731037;
RA Farr-Jones S., Miljanich G.P., Nadasdi L., Ramachandran J.,
RA Basus V.J.;
RT "Solution structure of omega-conotoxin MVIC, a high affinity ligand
RT of P-type calcium channels, using 1H NMR spectroscopy and complete
RT relaxation matrix analysis."
RL J. Mol. Biol. 248:106-124(1995).
RN [3]
RP STRUCTURE BY NMR.
RX PubMed=10373375;
RA Nielsen K.J., Adams D., Thomas L., Bond T., Alewood P.F., Craik D.J.,
RA Lewis R.J.;
RT "Structure-activity relationships of omega-conotoxins MVITA, MVIC and
RT 14 loop splice hybrids at N and P/Q-type calcium channels."
RL J. Mol. Biol. 289:1405-1421(1999).
RN [4]
RP MUTAGENESIS OF TYR-15.
RX PubMed=7677735;
RA Kim J.-I., Takahashi M., Martin-Moutot N., Seagar M.J., Ontake A.,
RA Sato K.;
RT "Tyr13 is essential for the binding of omega-conotoxin MVIC to the
RT P/Q-type calcium channel."
RL Biochem. Biophys. Res. Commun. 214:305-309(1995).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks N-type calcium channels as well as types of high-threshold
CC voltage-gated calcium channels resistant to both dihydropyridines
CC and omega-conotoxin GVIA.
CC -1- SUBCELLULAR LOCATION: Secreted.

CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.

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CC or send an email to license@isb-sib.ch).

CC EMBL; S40826; AAB22674.1; -.
DR PIR; JH0699; JH0699.
DR PDB; 1OMN; 01-DEC-95.
DR PDB; 1CNN; 31-MAY-00.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Hydroxylation; Amidation; 3D-structure.
FT NON_TER 1 1
FT PROPEP <1 2
FT PEPTIDE 3 28 OMEGA-CONOTOXIN MVIIC.
FT BINDING 15 15 ESSENTIAL FOR CALCIUM CHANNEL BINDING.
FT DISULFID 3 18
FT DISULFID 10 22
FT DISULFID 17 28
FT MOD_RES 9 9 HYDROXYLATION (PROBABLE).
FT MOD_RES 28 28 AMIDATION (G-29 PROVIDE AMIDE GROUP).
FT MUTAGEN 15 15 Y->A: HIGH DECREASE IN BINDING.
SQ SEQUENCE 29 AA; 3071 MW; AC7A68948474728A CRC64;

Query Match 64.4%; Score 98.5; DB 1; Length 29;
Best Local Similarity 61.5%; Pred. No. 5.6e-06;
Matches 16; Conservative 3; Mismatches 6; Indels 1; Gaps 1;

QY 1 CKGTGKPCSRIRAYNCTGSC-RSGKC 25
Db 3 CKGKGAPCRKTMYDCCSGSGCRGK 28

RESULT 9
CXOD_CONMA STANDARD; PRT; 29 AA.
ID CXOD_CONMA
AC Q26350;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin MVIID precursor (SNX-238) (Fragment).
OS Conus magus (Magus cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6492;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=94150815; PubMed=8107968;
RA Monje V.D., Haack J.A., Naisbitt S.R., Miljanich G., Ramchandran J.,
RA Nadasdi L., Olivera B.M., Hillyard D.R., Gray W.R.;
RT "A new Conus peptide ligand for Ca channel subtypes.";
RL Neuropharmacology 32:1141-1149(1993).
RN [2]
RP STRUCTURE BY NMR.
RX PubMed=9920728;
RA Clivera C., Vazquez A., Sevilla J.M., Bruix M., Gago F., Garcia A.G.,
RA Sevilla P.;
RT "Solution structure determination by two-dimensional 1H NMR of
RT omega-conotoxin MVIID, a calcium channel blocker peptide.";
RL Biochem. Biophys. Res. Commun. 254:32-35(1999).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks channels of the N-type as well as other types.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.

CC -----
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CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
CC or send an email to license@isb-sib.ch).

CC EMBL; S69322; AAB29902.1; -.
DR HSSP; P05484; LMVI.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Amidation.
FT NON_TER 1 1
FT PROPEP <1 3
FT PEPTIDE 4 28 OMEGA-CONOTOXIN MVIID.
FT DISULFID 4 19
FT DISULFID 11 23
FT DISULFID 18 28
FT MOD_RES 28 28
SQ SEQUENCE 29 AA; 3104 MW; 9E04B2EA3779CB22 CRC64;

Query Match 61.4%; Score 94; DB 1; Length 29;
Best Local Similarity 52.0%; Pred. No. 1.9e-05;
Matches 13; Conservative 4; Mismatches 8; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIRAYNCTGSC-RSGKC 25
Db 4 CGRGASCRKTMYNCCSGSCNRGRC 28

RESULT 10
CXOB_CONST STANDARD; PRT; 72 AA.
ID CXOB_CONST
AC P28881; Q9UB25;
DT 01-DEC-1992 (Rel. 24, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin SVIB precursor (SNX-183).
OS Conus striatus (Striated cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6493;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-Venom duct;
RX MEDLINE=20037955; PubMed=10573284;
RA Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;
RT "Conopeptides from Conus striatus and Conus textile by cDNA
RT cloning.";
RL Peptides 20:1139-1144(1999).
RN [2]
RP SEQUENCE OF 46-71, AND SYNTHESIS.
RC TISSUE-Venom;
RX MEDLINE=93003172; PubMed=1390774;
RA Ramilo C., Zafaralla G.C., Nadasdi L., Hammerland L.G., Yoshikami D.,
RA Gray W.R., Kristipati R., Ramchandran J., Miljanich G., Olivera B.M.,
RA Cruz L.J.;
RT "Novel alpha- and omega-conotoxins from Conus striatus venom.";
RL Biochemistry 31:9919-9926(1992).
RN [3]
RP STRUCTURE BY NMR.
RX MEDLINE=97070382; PubMed=8913308;
RA Nielsen K.J., Thomas L., Lewis R.J., Alewood P.F., Craik D.J.;
RT "A consensus structure for omega-conotoxins with different
RT selectivities for voltage-sensitive calcium channel subtypes:
RT comparison of MVIIA, SVIB and SNX-202.";
RL J. Mol. Biol. 263:297-310(1996).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). This toxin
CC blocks N-, P-, and Q-type calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.

CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
 CC FAMILY.
 CC -----
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 CC -----
 DR EMBL: AF146346; AAD31906.1; -.
 DR PIR: C44379; C44379.
 DR PDB: IMVJ; 12-AUG-97.
 DR InterPro: IPR004214; Conotoxin.
 DR Pfam: PF02950; Conotoxin; 1.
 KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
 KW Amidation; signal; 3D-structure.
 FT SIGNAL 1 22 POTENTIAL.
 FT PROPEP 23 45
 FT PEPTIDE 46 71 OMEGA-CONOTOXIN SVIB.
 FT DISULFID 53 65
 FT DISULFID 60 71
 FT MOD_RES 71 71
 SQ SEQUENCE 72 AA; 7741 MW; 1F753546AAD39908 CRC64;
 Query Match 58.5%; Score 89.5; DB 1; Length 72;
 Best Local Similarity 57.7%; Pred. No. 0.0013;
 Matches 15; Conservative 5; Mismatches 5; Indels 1; Gaps 1;
 QY 1 CKGTGKPCSRIRAYNCTGSC-RSGKC 25
 Db 46 CKLKGQSCRRTSYDCSGSGRSGKC 71
 RESULT 11
 CXOD_CONCT STANDARD; PRT; 73 AA.
 AC P58920;
 DT 15-JUN-2002 (Rel. 41, Created)
 DT 15-JUN-2002 (Rel. 41, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Omega-conotoxin CVID precursor.
 OS Conus catus (Cat cone).
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
 OC Neogastropoda; Conoidea; Conidae; Conus.
 OX NCBI_TaxID=101291;
 RN [1]
 RP SEQUENCE FROM N.A., SEQUENCE OF 46-72, SYNTHESIS, AND STRUCTURE BY
 RP NMR.
 RC TISSUE-Venom duct, and Venom;
 RX PubMed=10938268;
 RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,
 RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,
 RA Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.,
 RT "Novel omega-conotoxins from Conus catus discriminate among neuronal
 RT calcium channel subtypes";
 RL J. Biol. Chem. 275:35335-35344(2000).
 CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
 CC and block voltage-sensitive calcium channels (VSCC) (By
 CC similarity). This toxin blocks N-type calcium channels.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
 CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
 CC FAMILY.
 KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
 KW Amidation; signal.
 FT SIGNAL 1 22 POTENTIAL.
 FT PROPEP 23 45
 FT PEPTIDE 46 72 OMEGA-CONOTOXIN CVID.
 FT DISULFID 46 61 BY SIMILARITY.
 FT DISULFID 53 65 BY SIMILARITY.

FT DISULFID 60 72 BY SIMILARITY.
 FT MOD_RES 72 72 AMIDATION (G-73 PROVIDE AMIDE GROUP).
 SQ SEQUENCE 73 AA; 7748 MW; C4CEBD30C77DAEC3 CRC64;
 Query Match 54.9%; Score 84; DB 1; Length 73;
 Best Local Similarity 48.1%; Pred. No. 0.0006;
 Matches 13; Conservative 5; Mismatches 7; Indels 2; Gaps 1;
 QY 1 CKGTGKPCSRIRAYNCTGSCRS--GKC 25
 Db 46 CKSKGAKCSKLMYDCCSGSGSGTVGRC 72
 RESULT 12
 CXO6_CONRA STANDARD; PRT; 27 AA.
 ID CXO6_CONRA
 AC P58914;
 DT 15-JUN-2002 (Rel. 41, Created)
 DT 15-JUN-2002 (Rel. 41, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Omega-conotoxin RVIA.
 OS Conus radiatus (Rayed cone).
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
 OC Neogastropoda; Conoidea; Conidae; Conus.
 OX NCBI_TaxID=61198;
 RN [1]
 RP SEQUENCE.
 RA Miljanich G.P., Bitner R.S., Bowersox S.S., Fox J.A., Valentino K.L.,
 RA Yamashiro D.H.,
 RT "Method of treating ischemia-related neuronal damage.";
 RL Patent number US051403, 24-SEP-1991.
 CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
 CC and block voltage-sensitive calcium channels (VSCC).
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
 CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
 CC FAMILY.
 KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
 KW Hydroxylation.
 FT DISULFID 1 16
 FT DISULFID 8 19
 FT DISULFID 15 26
 FT MOD_RES 4 4
 FT MOD_RES 7 7
 SQ SEQUENCE 27 AA; 2887 MW; F554C1F8A01A88AF CRC64;
 Query Match 45.4%; Score 69.5; DB 1; Length 27;
 Best Local Similarity 51.9%; Pred. No. 0.015;
 Matches 14; Conservative 3; Mismatches 7; Indels 3; Gaps 2;
 QY 1 CKGTGKPCSRIRAYNCTGSCRS--GKC 25
 Db 1 CKPSPGSRVSSYNCCS-SCKSYNKKC 26
 RESULT 13
 CXO7_CONGE STANDARD; PRT; 29 AA.
 ID CXO7_CONGE
 AC P03483;
 DT 01-NOV-1988 (Rel. 09, Created)
 DT 01-NOV-1988 (Rel. 09, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Omega-conotoxins GVIA/GVIB (SNX-178).
 OS Conus geographus (Geography cone).
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
 OC Neogastropoda; Conoidea; Conidae; Conus.
 OX NCBI_TaxID=6491;
 RN [1]
 RP SEQUENCE.
 RX MEDLINE=86070213; PubMed=4071055;
 RA Oliveira B.M., Gray W.R., Zeikus R.D., McIntosh J.M., Varga J.,
 RA Rivier J.E., de Santos V., Cruz L.J.,
 RT "Peptide neurotoxins from fish-hunting cone snails.";

RL Science 230:1338-1343(1985).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CONOTOXIN GVIIA.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
DR PIR: A43620; A43620.
DR PIR: B43620; B43620.
KW Presynaptic neurotoxin; Toxin; Calcium channel inhibitor;
KW Hydroxylation.
FT MOD_RES 4 4 HYDROXYLATION.
FT MOD_RES 7 7 HYDROXYLATION.
FT DISULFID 1 16
FT DISULFID 8 19
FT DISULFID 15 26
FT VARIANT 21 21 L -> S (IN GVIIA).
SQ SEQUENCE 29 AA; 3290 MW; 57307C69583FB1E7 CRC64;

Query Match 44.1%; Score 67.5; DB 1; Length 29;
Best Local Similarity 55.6%; Pred. No. 0.028; Mismatches 8; Indels 3; Gaps 2;
Matches 15; Conservative 1; Mismatches 8; Indels 3; Gaps 2;

Qy 1 CKGTGKPCSRVAYNCTGSC--RSGKC 25
Db 1 CKSPGTGKPCSRGMDCT-SCLLYSNKC 26

RESULT 14
CX07_CONTE STANDARD; PRT; 26 AA.
AC P56714;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin Txvii.
OS Conus textile (Cloth-of-gold cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6494;
RN [1]
RP SEQUENCE.
RC TISSUE-Venom;
RX MEDLINE=96266175; PubMed=8679638;
RA Fainzilber M., Lodder J.C., van der Schoors R.C., Li K.W., Yu Z.,
RA Burlingame A.L., Geraerts W.P.M., Kils K.S.;
RT "A novel hydrophobic omega-conotoxin blocks molluscan dihydropyridine-
RT sensitive calcium channels.";
RL Biochemistry 35:8748-8752(1996).
RN [2]
RP STRUCTURE BY NMR.
RX MEDLINE=20552922; PubMed=11101291;
RA Kobayashi K., Sasaki T., Sato K., Kohno T.;
RT "Three-dimensional solution structure of omega-conotoxin Txvii, an
RT L-type calcium channel blocker.";
RL Biochemistry 39:14761-14767(2000).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC). Specifically
CC acts on L-type channels. It blocks molluscan dihydropyridine-
CC sensitive calcium channels.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- MASS SPECTROMETRY: MW=2832.23; METHOD=Electrospray.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.
DR PDB: 1F3K; 13-DEC-00.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW 3D-structure.
FT DISULFID 1 16
FT DISULFID 8 20
FT DISULFID 15 24
SQ SEQUENCE 26 AA; 2840 MW; 3AFEE21698666294 CRC64;

Query Match 40.8%; Score 62.5; DB 1; Length 26;
Best Local Similarity 44.0%; Pred. No. 0.1;
Matches 11; Conservative 3; Mismatches 10; Indels 1; Gaps 1;

Qy 1 CKGTGKPCSRVAYNCTGSCRSKC 25
Db 1 CKQADPCDVFSLDCTGIC-LGVC 24

RESULT 15
CX06_CONGE STANDARD; PRT; 73 AA.
ID CX06_CONGE
AC P01522;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Omega-conotoxin GVIA precursor (Shaker peptide) (SNX-124) [Contains:
DE Omega-conotoxin GVIB; Omega-conotoxin GVIC].
DE Omega-conotoxin GVIB; Omega-conotoxin GVIC].
OS Conus geographus (Geography cone).
OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC Neogastropoda; Conoidea; Conidae; Conus.
OX NCBI_TaxID=6491;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=93069266; PubMed=1440648;
RA Colledge C.J., Hunsperger J.P., Imperial J.S., Hillyard D.R.;
RT "Precursor structure of omega-conotoxin GVIA determined from a cDNA
RT clone.";
RL Toxicon 30:1111-1116(1992).
RN [2]
RP SEQUENCE OF 46-73.
RX MEDLINE=85072796; PubMed=6509012;
RA Olivera B.M., McIntosh J.M., Cruz L.J., Luque F.A., Gray W.R.;
RT "Purification and sequence of a presynaptic peptide toxin from Conus
RT geographus venom.";
RL Biochemistry 23:5087-5090(1984).
RN [3]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE=94047089; PubMed=8230223;
RA Pallaghy P.K., Dugan B.M., Pennington M.W., Norton R.S.;
RT "Three-dimensional structure in solution of the calcium channel
RT blocker omega-conotoxin.";
RL J. Mol. Biol. 234:405-420(1993).
RN [4]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE=93332945; PubMed=8338837;
RA Davis J.H., Bradley E.K., Miljanich G.P., Nadasdi L.,
RA Ramachandran J., Basus V.J.;
RT "Solution structure of omega-conotoxin GVIA using 2-D NMR
RT spectroscopy and relaxation matrix analysis.";
RL Biochemistry 32:7396-7405(1993).
RN [5]
RP STRUCTURE BY NMR OF GVIA.
RX MEDLINE=99248506; PubMed=10231724;
RA Pallaghy P.K., Norton R.S.;
RT "Refined solution structure of omega-conotoxin GVIA: Implications for
RT calcium channel binding.";
RL J. Pept. Res. 53:343-351(1999).
CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind
CC and block voltage-sensitive calcium channels (VSCC).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.
CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE
CC FAMILY.

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CC -----
DR EMBL; M84612; AA81590.1; -.
DR PIR; A60133; NTKN6G.
DR PIR; A44006; A44006.
DR PDB; 2CCO; 15-JUL-98.
DR PDB; 1OMC; 31-JAN-94.
DR InterPro; IPR004214; Conotoxin.
DR Pfam; PF02950; Conotoxin; 1.
KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW Hydroxylation; Amidation; Signal; 3D-structure.
FT SIGNAL 1 22
FT PROPEP 23 45
FT PEPTIDE 46 73
FT PEPTIDE 46 72
FT PEPTIDE 46 71
FT MOD_RES 49 49
FT MOD_RES 55 55
FT MOD_RES 66 66
FT MOD_RES 72 72
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FT DISULFID 60 71
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FT STRAND 70 71
SQ SEQUENCE 73 AA; 7851 MW; 51A8C8FA630F7175 CRC64;

Query Match 40.2%; Score 61.5; DB 1; Length 73;
Best Local Similarity 55.08; Pred. No. 0.29;
Matches 11; Conservative 1; Mismatches 7; Indels 1; Gaps 1;

QY 1 CKGTGKPCSRRIAYNCTGSC 20
   || | | :||| | |
Db 46 CKSPGSSCSPTSYNCCR-SC 64
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Search completed: May 20, 2003, 15:39:00
Job time : 8.29167 secs

GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:41:00 ; Search time 17.9688 Seconds
(without alignments)
137.979 Million cell updates/sec

Title: US-09-910-082A-375
Perfect score: 153
Sequence: 1 CKGTGKPCSRIAYNCTGSCRSKC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 375593 seqs, 99172665 residues

Total number of hits satisfying chosen parameters: 375593

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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- 2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
- 3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
- 4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep.*
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- 7: /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep.*
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- 10: /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep.*
- 11: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep.*
- 12: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep.*
- 13: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep.*
- 14: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	70	45.8	1840	US-10-123-155-131	Sequence 131, App
2	69	45.1	1058	US-10-123-155-231	Sequence 231, App
3	68	44.4	2380	US-10-184-644-597	Sequence 597, App
4	68	44.4	2380	US-10-184-634-597	Sequence 597, App
5	67	43.8	708	US-10-184-644-211	Sequence 211, App
6	67	43.8	708	US-10-184-634-211	Sequence 211, App
7	67	43.8	1413	US-10-184-644-33	Sequence 33, Appl
8	67	43.8	1413	US-10-184-634-33	Sequence 33, Appl
9	66.5	43.5	2886	US-10-184-644-7	Sequence 7, Appl
10	66.5	43.5	2886	US-10-184-634-7	Sequence 7, Appl
11	66	43.1	1328	US-10-123-155-9	Sequence 157, Appl
12	66	43.1	2276	US-10-123-155-157	Sequence 9, Appl
13	66	43.1	2692	US-10-184-644-225	Sequence 225, App
14	66	43.1	2692	US-10-184-634-225	Sequence 225, App
15	66	43.1	3266	US-10-123-155-211	Sequence 211, App
16	66	43.1	4185	US-10-123-155-67	Sequence 67, Appl
17	65	42.5	1570	US-10-184-644-335	Sequence 335, App
18	65	42.5	1570	US-10-184-634-335	Sequence 335, App
19	65	42.5	3690	US-10-184-644-517	Sequence 517, App

20	65	42.5	3690	US-10-184-634-517	Sequence 517, App
21	65	42.5 <td>3819</td> <td>US-10-123-155-405</td> <td>Sequence 405, App</td>	3819	US-10-123-155-405	Sequence 405, App
22	64.5	42.2	2397	US-10-184-644-29	Sequence 29, Appl
23	64.5	42.2	2397	US-10-184-634-29	Sequence 29, Appl
24	64.5	42.2	3721	US-10-123-155-543	Sequence 543, App
25	64	41.8	46	US-09-894-882-377	Sequence 377, App
26	64	41.8	46	US-09-894-882-383	Sequence 383, App
27	64	41.8	46	US-09-894-882-414	Sequence 414, App
28	64	41.8	46	US-09-894-882-425	Sequence 425, App
29	64	41.8	46	US-09-894-882-437	Sequence 437, App
30	64	41.8	82	US-09-894-882-45	Sequence 45, Appl
31	64	41.8	82	US-09-894-882-54	Sequence 54, Appl
32	64	41.8	82	US-09-894-882-71	Sequence 71, Appl
33	64	41.8	82	US-09-894-882-101	Sequence 101, App
34	64	41.8	82	US-09-894-882-122	Sequence 122, App
35	64	41.8	82	US-09-894-882-143	Sequence 143, App
36	64	41.8	1174	US-10-184-644-353	Sequence 353, App
37	64	41.8	1174	US-10-184-634-353	Sequence 353, App
38	64	41.8	1300	US-10-174-590-269	Sequence 269, App
39	64	41.8	1300	US-10-176-758-269	Sequence 269, App
40	64	41.8	1300	US-10-175-737-269	Sequence 269, App
41	64	41.8	1300	US-10-173-706-269	Sequence 269, App
42	64	41.8	1300	US-10-175-738-269	Sequence 269, App
43	64	41.8	1300	US-10-175-752-269	Sequence 269, App
44	64	41.8	1300	US-10-176-482-269	Sequence 269, App
45	64	41.8	1300	US-10-176-757-269	Sequence 269, App

ALIGNMENTS

RESULT 1
US-10-123-155-131
; Sequence 131, Application US/10123155
; Publication No. US20030068794A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Beresini, Maureen
; APPLICANT: Deforge, Laura
; APPLICANT: Desnoyers, Luc
; APPLICANT: Filvaroff, Ellen
; APPLICANT: Gao, Wei-Qiang
; APPLICANT: Gerlitsen, Mary E.
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Sherwood, Steven
; APPLICANT: Smith, Victoria
; APPLICANT: Stewart, Timothy A.
; APPLICANT: Tumas, Daniel
; APPLICANT: Watanabe, Colin K
; APPLICANT: Wood, William
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3330R1C30
; CURRENT APPLICATION NUMBER: US/10/123,155
; CURRENT FILING DATE: 2002-04-15
; Prior Application removed - See Palm or file wrapper
; NUMBER OF SEQ ID NOS: 550
; SEQ ID NO 131
; LENGTH: 1840
; TYPE: DNA
; ORGANISM: Homo Sapien
; US-10-123-155-131

Query Match 45.8%; Score 70; DB 9; Length 1840;

Best Local Similarity 44.0%; Pred. No. 6.2;

Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKC 25
Db 241 CGGTGTGCGGACAGCCAGCATGCC 265

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RESULT 2
US-10-123-155-231
; Sequence 231, Application US/10123155
; Publication No. US20030068794A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Beresini, Maureen
; APPLICANT: Deforge, Laura
; APPLICANT: Desnoyers, Luc
; APPLICANT: Filvaroff, Ellen
; APPLICANT: Gao, Wei-Qiang
; APPLICANT: Gerltsen, Mary E.
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Sherwood, Steven
; APPLICANT: Smith, Victoria
; APPLICANT: Stewart, Timothy A.
; APPLICANT: Tumas, Daniel
; APPLICANT: Watanabe, Colin K
; APPLICANT: Wood, William
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; TITLE OF INVENTION: ACIDS ENCODING THE SAME
; FILE REFERENCE: P3330R1C30
; CURRENT APPLICATION NUMBER: US/10/123,155
; CURRENT FILING DATE: 2002-04-15
; Prior Application removed - See Palm or File Wrapper
; NUMBER OF SEQ ID NOS: 550
; SEQ ID NO 231
; LENGTH: 1058
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-123-155-231

Query Match      45.1%; Score 69; DB 9; Length 1058;
Best Local Similarity 48.0%; Pred. No. 5.1;
Matches 12; Conservative 1; Mismatches 12; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
   ||||| 1 ||||| 1 1
DB 238 CTGGGGGACAGCAGCCCTGCTGGAC 262

RESULT 3
US-10-184-644-597
; Sequence 597, Application US/10184644
; Publication No. US20030044930A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Chen, Jian
; APPLICANT: Desnoyers, Luc
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Pan, James
; APPLICANT: Smith, Victoria
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; TITLE OF INVENTION: ACIDS ENCODING THE SAME
; FILE REFERENCE: P3430R1C227
; CURRENT APPLICATION NUMBER: US/10/184,644
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See File Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 597
; LENGTH: 2380
; TYPE: DNA
; ORGANISM: Homo Sapien
```

```
US-10-184-644-597

Query Match      44.4%; Score 68; DB 9; Length 2380;
Best Local Similarity 48.0%; Pred. No. 12;
Matches 12; Conservative 1; Mismatches 12; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
   ||||| 1 ||||| 1 1
DB 932 CGGTGGCACAAAACCTGACTGGAC 956

RESULT 4
US-10-184-634-597
; Sequence 597, Application US/10184634
; Publication No. US20030068684A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Chen, Jian
; APPLICANT: Desnoyers, Luc
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Pan, James
; APPLICANT: Smith, Victoria
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; TITLE OF INVENTION: ACIDS ENCODING THE SAME
; FILE REFERENCE: P3430R1C217
; CURRENT APPLICATION NUMBER: US/10/184,634
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See File Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 597
; LENGTH: 2380
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-184-634-597

Query Match      44.4%; Score 68; DB 9; Length 2380;
Best Local Similarity 48.0%; Pred. No. 12;
Matches 12; Conservative 1; Mismatches 12; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
   ||||| 1 ||||| 1 1
DB 932 CGGTGGCACAAAACCTGACTGGAC 956

RESULT 5
US-10-184-644-211
; Sequence 211, Application US/10184644
; Publication No. US20030044930A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Chen, Jian
; APPLICANT: Desnoyers, Luc
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Pan, James
; APPLICANT: Smith, Victoria
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; TITLE OF INVENTION: ACIDS ENCODING THE SAME
; FILE REFERENCE: P3430R1C227
; CURRENT APPLICATION NUMBER: US/10/184,644
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See File Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 211
```

LENGTH: 708
TYPE: DNA
ORGANISM: Homo Sapien
US-10-184-644-211

Query Match 43.8%; Score 67; DB 9; Length 708;
Best Local Similarity 44.0%; Pred. No. 6;
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 338 CTCTGACCGCTTCTCCTGGCATGAC 362

RESULT 6
US-10-184-634-211

Sequence 211, Application US/10184634
Publication No. US20030068684A1
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.
APPLICANT: Chen, Jian
APPLICANT: Desnoyers, Luc
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
APPLICANT: Pan, James
APPLICANT: Smith, Victoria
APPLICANT: Watanabe, Colin K.
APPLICANT: Wood, William I.
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
FILE REFERENCE: P3430R1C217
CURRENT APPLICATION NUMBER: US/10/184,634
CURRENT FILING DATE: 2002-06-28
Prior Application removed - See File Wrapper or Palm
NUMBER OF SEQ ID NOS: 612
SEQ ID NO 211
LENGTH: 708
TYPE: DNA
ORGANISM: Homo Sapien
US-10-184-634-211

Query Match 43.8%; Score 67; DB 9; Length 708;
Best Local Similarity 44.0%; Pred. No. 6;
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 338 CTCTGACCGCTTCTCCTGGCATGAC 362

RESULT 7
US-10-184-644-33

Sequence 33, Application US/10184644
Publication No. US20030044930A1
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.
APPLICANT: Chen, Jian
APPLICANT: Desnoyers, Luc
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
APPLICANT: Pan, James
APPLICANT: Smith, Victoria
APPLICANT: Watanabe, Colin K.
APPLICANT: Wood, William I.
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
FILE REFERENCE: P3430R1C227
CURRENT APPLICATION NUMBER: US/10/184,644
CURRENT FILING DATE: 2002-06-28

Prior Application removed - See File Wrapper or Palm
NUMBER OF SEQ ID NOS: 612
SEQ ID NO 33
LENGTH: 1413
TYPE: DNA
ORGANISM: Homo Sapien
US-10-184-644-33

Query Match 43.8%; Score 67; DB 9; Length 1413;
Best Local Similarity 44.0%; Pred. No. 10;
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 518 CTATGCCAGCAAGCCAGCCACGAC 542

RESULT 8
US-10-184-634-33

Sequence 33, Application US/10184634
Publication No. US20030068684A1
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.
APPLICANT: Chen, Jian
APPLICANT: Desnoyers, Luc
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
APPLICANT: Pan, James
APPLICANT: Smith, Victoria
APPLICANT: Watanabe, Colin K.
APPLICANT: Wood, William I.
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
FILE REFERENCE: P3430R1C217
CURRENT APPLICATION NUMBER: US/10/184,634
CURRENT FILING DATE: 2002-06-28
Prior Application removed - See File Wrapper or Palm
NUMBER OF SEQ ID NOS: 612
SEQ ID NO 33
LENGTH: 1413
TYPE: DNA
ORGANISM: Homo Sapien
US-10-184-634-33

Query Match 43.8%; Score 67; DB 9; Length 1413;
Best Local Similarity 44.0%; Pred. No. 10;
Matches 11; Conservative 1; Mismatches 13; Indels 0; Gaps 0;

OY 1 CKGTGKPCSRIAYNCTGSCRSKGC 25
DB 518 CTATGCCAGCAAGCCAGCCACGAC 542

RESULT 9
US-10-184-644-7

Sequence 7, Application US/10184644
Publication No. US20030044930A1
GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.
APPLICANT: Chen, Jian
APPLICANT: Desnoyers, Luc
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
APPLICANT: Pan, James
APPLICANT: Smith, Victoria
APPLICANT: Watanabe, Colin K.
APPLICANT: Wood, William I.
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC


```
FILE REFERENCE: P3430R1C227
; CURRENT APPLICATION NUMBER: US/10/184,644
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See file Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 7
; LENGTH: 2886
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-184-644-7

Query Match      43.5%; Score 66.5; DB 9; Length 2886;
Best Local Similarity 37.5%; Pred. No. 21;
Matches 12; Conservative 3; Mismatches 10; Indels 7; Gaps 1;

QY 1 CKGTGKPCSR1AYNCCTGSC-----RSGKC 25
   ||||| | : ||||| : |
Db 640 CAGTGGGCTTCCTCCTGACTTTATTTTGTG 671

RESULT 10
US-10-184-634-7
; Sequence 7, Application US/10184634
; Publication No. US20030068684A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Chen, Jian
; APPLICANT: Desnoyers, Luc
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Pan, James
; APPLICANT: Smith, Victoria
; APPLICANT: Watanabe, Colin K.
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3430R1C217
; CURRENT APPLICATION NUMBER: US/10/184,634
; CURRENT FILING DATE: 2002-06-28
; Prior Application removed - See file Wrapper or Palm
; NUMBER OF SEQ ID NOS: 612
; SEQ ID NO 7
; LENGTH: 2886
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-184-634-7

Query Match      43.5%; Score 66.5; DB 9; Length 2886;
Best Local Similarity 37.5%; Pred. No. 21;
Matches 12; Conservative 3; Mismatches 10; Indels 7; Gaps 1;

QY 1 CKGTGKPCSR1AYNCCTGSC-----RSGKC 25
   ||||| | : ||||| : |
Db 640 CAGTGGGCTTCCTCCTGACTTTATTTTGTG 671

RESULT 11
US-10-123-155-157
; Sequence 157, Application US/10123155
; Publication No. US20030068794A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Beresini, Maureen
; APPLICANT: Deforge, Laura
; APPLICANT: Desnoyers, Luc
; APPLICANT: Filvaroff, Ellen
; APPLICANT: Gao, Wei-Qiang
; APPLICANT: Gerritsen, Mary E.
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
```

```
APPLICANT: Sherwood, Steven
; APPLICANT: Smith, Victoria
; APPLICANT: Stewart, Timothy A.
; APPLICANT: Tumas, Daniel
; APPLICANT: Watanabe, Colin K
; APPLICANT: Wood, William
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3330R1C30
; CURRENT APPLICATION NUMBER: US/10/123,155
; CURRENT FILING DATE: 2002-04-15
; Prior Application removed - See Palm or File Wrapper
; NUMBER OF SEQ ID NOS: 550
; SEQ ID NO 157
; LENGTH: 1328
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-123-155-157

Query Match      43.1%; Score 66; DB 9; Length 1328;
Best Local Similarity 52.0%; Pred. No. 13;
Matches 13; Conservative 0; Mismatches 10; Indels 2; Gaps 1;

QY 1 CKGTGKPCSR1AYNCCTGSCRSKGC 25
   ||||| | : ||||| | : |
Db 520 CTGTGAGCCCAACCTGTGC--GAC 542

RESULT 12
US-10-123-155-9
; Sequence 9, Application US/10123155
; Publication No. US20030068794A1
; GENERAL INFORMATION:
; APPLICANT: Baker, Kevin P.
; APPLICANT: Beresini, Maureen
; APPLICANT: Deforge, Laura
; APPLICANT: Desnoyers, Luc
; APPLICANT: Filvaroff, Ellen
; APPLICANT: Gao, Wei-Qiang
; APPLICANT: Gerritsen, Mary E.
; APPLICANT: Goddard, Audrey
; APPLICANT: Godowski, Paul J.
; APPLICANT: Gurney, Austin L.
; APPLICANT: Sherwood, Steven
; APPLICANT: Smith, Victoria
; APPLICANT: Stewart, Timothy A.
; APPLICANT: Tumas, Daniel
; APPLICANT: Watanabe, Colin K
; APPLICANT: Wood, William
; APPLICANT: Zhang, Zemin
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
; FILE REFERENCE: P3330R1C30
; CURRENT APPLICATION NUMBER: US/10/123,155
; CURRENT FILING DATE: 2002-04-15
; Prior Application removed - See Palm or File Wrapper
; NUMBER OF SEQ ID NOS: 550
; SEQ ID NO 9
; LENGTH: 2276
; TYPE: DNA
; ORGANISM: Homo Sapien
US-10-123-155-9

Query Match      43.1%; Score 66; DB 9; Length 2276;
Best Local Similarity 44.0%; Pred. No. 20;
Matches 11; Conservative 2; Mismatches 12; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCCTGSCRSKGC 25
   ||||| | : ||||| | : |
Db 816 CAGAGGCATCAAGCATGCCAAGGC 840
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GenCore version 5.1.4_p5_4578
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OM protein - protein search, using sw model

Run on: May 20, 2003, 15:36:46 ; Search time 9.89583 Seconds
(without alignments)
74.332 Million cell updates/sec

Title: US-09-910-082a-375
Perfect score: 153
Sequence: 1 CKGTGKPCSR1AYNCCTGSCRSKGC 25

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/1aa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/1aa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/1aa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/1aa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/1aa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/1aa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	126	82.4	25	1	US-08-496-847-35 Sequence 35, Appl
2	126	82.4	25	2	US-08-965-918-35 Sequence 35, Appl
3	126	82.4	25	3	US-08-613-400A-35 Sequence 35, Appl
4	123	80.4	25	1	US-08-049-794-12 Sequence 12, Appl
5	123	80.4	25	1	US-08-496-847-12 Sequence 12, Appl
6	123	80.4	25	2	US-08-742-774-12 Sequence 12, Appl
7	123	80.4	25	2	US-08-675-354-12 Sequence 12, Appl
8	123	80.4	25	2	US-08-965-918-12 Sequence 12, Appl
9	123	80.4	25	2	US-09-138-439-12 Sequence 12, Appl
10	123	80.4	25	3	US-08-613-400A-12 Sequence 12, Appl
11	123	80.4	25	3	US-09-298-017-12 Sequence 12, Appl
12	123	80.4	25	4	US-09-392-979A-12 Sequence 12, Appl
13	122	79.7	25	1	US-07-789-913-9 Sequence 9, Appl
14	122	79.7	25	1	US-07-789-913-12 Sequence 9, Appl
15	122	79.7	25	1	US-08-049-794-9 Sequence 9, Appl
16	122	79.7	25	1	US-08-049-794-17 Sequence 9, Appl
17	122	79.7	25	1	US-08-496-847-9 Sequence 9, Appl
18	122	79.7	25	1	US-08-496-847-17 Sequence 9, Appl
19	122	79.7	25	1	US-08-496-847-36 Sequence 36, Appl
20	122	79.7	25	2	US-08-742-774-9 Sequence 9, Appl
21	122	79.7	25	2	US-08-742-774-17 Sequence 9, Appl
22	122	79.7	25	2	US-08-675-354-9 Sequence 9, Appl
23	122	79.7	25	2	US-08-675-354-17 Sequence 9, Appl
24	122	79.7	25	2	US-08-965-918-9 Sequence 9, Appl
25	122	79.7	25	2	US-08-965-918-17 Sequence 17, Appl
26	122	79.7	25	2	US-08-965-918-36 Sequence 36, Appl
27	122	79.7	25	2	US-09-138-439-9 Sequence 9, Appl

28	122	79.7	25	2	US-09-138-439-17 Sequence 17, Appl
29	122	79.7	25	3	US-08-613-400A-9 Sequence 9, Appl
30	122	79.7	25	3	US-08-613-400A-17 Sequence 17, Appl
31	122	79.7	25	3	US-08-613-400A-36 Sequence 36, Appl
32	122	79.7	25	3	US-09-298-017-9 Sequence 9, Appl
33	122	79.7	25	3	US-09-298-017-17 Sequence 17, Appl
34	122	79.7	25	4	US-09-392-979A-9 Sequence 9, Appl
35	122	79.7	25	4	US-09-392-979A-17 Sequence 17, Appl
36	122	79.7	26	1	US-08-049-794-11 Sequence 11, Appl
37	122	79.7	26	1	US-08-496-847-11 Sequence 11, Appl
38	122	79.7	26	2	US-08-742-774-11 Sequence 11, Appl
39	122	79.7	26	2	US-08-675-354-11 Sequence 11, Appl
40	122	79.7	26	2	US-08-965-918-11 Sequence 11, Appl
41	122	79.7	26	2	US-09-138-439-11 Sequence 11, Appl
42	122	79.7	26	3	US-08-613-400A-11 Sequence 11, Appl
43	122	79.7	26	3	US-09-298-017-11 Sequence 11, Appl
44	122	79.7	26	4	US-09-392-979A-11 Sequence 11, Appl
45	121	79.1	25	1	US-07-789-913-1 Sequence 1, Appl

ALIGNMENTS

RESULT 1
US-08-496-847-35
Sequence 35, Application US/08496847
Patent No. 5795864
GENERAL INFORMATION:
APPLICANT: Amstutz, Gary A.
APPLICANT: Bowersox, Stephen S.
APPLICANT: Gohil, Kishorchandra
APPLICANT: Adriaenssens, Peter I.
APPLICANT: Kristipati, Ramasharma
TITLE OF INVENTION: METHODS AND
TITLE OF INVENTION: FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN
NUMBER OF SEQUENCES: 36
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Avenue, Suite 250
CITY: Palo Alto
STATE: CA
COUNTRY: US
ZIP: 94306-1546
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSeq for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/496,847
FILING DATE: 27-JUN-1995
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Stratford, Carol A
REGISTRATION NUMBER: 34,444
REFERENCE/DOCKET NUMBER: 5865-0009.31
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-0880
TELEFAX: 650-324-0960
INFORMATION FOR SEQ ID NO: 35:
SEQUENCE CHARACTERISTICS:
LENGTH: 25 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: SNX-273, FIGURE 2
US-08-496-847-35

Query Match 82.4%; Score 126; DB 1; Length 25;
Best Local Similarity 80.0%; Pred. No. 3e-07;
Matches 20; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 1 CKGTGKPCSR1AYNCTGSCRSKC 25
||| | |||:|||||
DB 1 CKGKAKCSRLAYDCCTGSCRSKC 25

RESULT 2

US-08-965-918-35
Sequence 35, Application US/08965918
Patent No. 5891849

GENERAL INFORMATION:

APPLICANT: Amstutz, Gary A.
APPLICANT: Bowersox, Stephen S.
APPLICANT: Gohil, Kishorchandra
APPLICANT: Adriaenssens, Peter I.
APPLICANT: Kristipati, Ramasharma
TITLE OF INVENTION: METHODS AND FORMULATIONS FOR PREVENTING
TITLE OF INVENTION: PROGRESSION OF NEUROPATHIC PAIN
NUMBER OF SEQUENCES: 36
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Avenue, Suite 250
CITY: Palo Alto
STATE: CA
COUNTRY: US
ZIP: 94306-1546

COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette

COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS

SOFTWARE: Fastseq for Windows Version 2.0

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/965,918

FILING DATE: 07-NOV-1997

CLASSIFICATION: 514

ATTORNEY/AGENT INFORMATION:

NAME: Mohr, Judy M.

REGISTRATION NUMBER: 38,563

REFERENCE/DOCKET NUMBER: 5865-0009.34

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650-324-0880

TELEFAX: 650-324-0960

INFORMATION FOR SEQ ID NO: 35:

SEQUENCE CHARACTERISTICS:

LENGTH: 25 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide

HYPOTHETICAL: NO

ORIGINAL SOURCE:

INDIVIDUAL ISOLATE: SNX-273, FIGURE 2

-08-965-918-35

Query Match 82.4%; Score 126; DB 2; Length 25;

Best Local Similarity 80.0%; Pred. No. 3e-07;

Matches 20; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 1 CKGTGKPCSR1AYNCTGSCRSKC 25
||| | |||:|||||
DB 1 CKGKAKCSRLAYDCCTGSCRSKC 25

RESULT 3

US-08-613-400A-35

Sequence 35, Application US/08613400A

Patent No. 6054429

GENERAL INFORMATION:

APPLICANT: Bowersox, S. Scott

APPLICANT: Gadbois, Theresa

APPLICANT: Pettus, Mark, R.

APPLICANT: Luther, Robert, R.

TITLE OF INVENTION: IMPROVED EPIDURAL

TITLE OF INVENTION: METHOD OF PRODUCING ANALGESIA

NUMBER OF SEQUENCES: 36

CORRESPONDENCE ADDRESS:

ADDRESSEE: Dehlinger & Associates

STREET: 350 Cambridge Avenue, Suite 250

CITY: Palo Alto

STATE: CA

COUNTRY: US

ZIP: 94306-1546

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette

COMPUTER: IBM Compatible

OPERATING SYSTEM: DOS

SOFTWARE: Fastseq for Windows Version 2.0

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/613,400A

FILING DATE: 08-MAR-1996

CLASSIFICATION: 514

PRIOR APPLICATION DATA:

APPLICATION NUMBER:

FILING DATE:

ATTORNEY/AGENT INFORMATION:

NAME: Stratford, Carol A

REGISTRATION NUMBER: 34,444

REFERENCE/DOCKET NUMBER: 5865-0019

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650-324-0880

TELEFAX: 650-324-0960

INFORMATION FOR SEQ ID NO: 35:

SEQUENCE CHARACTERISTICS:

LENGTH: 25 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: protein

HYPOTHETICAL: NO

ORIGINAL SOURCE:

INDIVIDUAL ISOLATE: MY11A/SNX-111, FIGURE 2

US-08-613-400A-35

Query Match 82.4%; Score 126; DB 3; Length 25;

Best Local Similarity 80.0%; Pred. No. 3e-07;

Matches 20; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 1 CKGTGKPCSR1AYNCTGSCRSKC 25
||| | |||:|||||
DB 1 CKGKAKCSRLAYDCCTGSCRSKC 25

RESULT 4

US-08-049-794-12

Sequence 12, Application US/08049794

Patent No. 5587454

GENERAL INFORMATION:

APPLICANT: JUSTICE, ALAN

APPLICANT: SINGH, TEJINDER

APPLICANT: GOHIL, KISHOR C

APPLICANT: VALENTINO, KAREN L

APPLICANT: MILJANICH, GEORGE P

TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND

TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA

NUMBER OF SEQUENCES: 34

CORRESPONDENCE ADDRESS:

ADDRESSEE: Law Offices of Peter Dehlinger

STREET: 350 Cambridge Avenue, Suite 300

CITY: Palo Alto

STATE: CA

COUNTRY: USA

ZIP: 94306

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PatentIn Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/049,794
FILING DATE: 19930415
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/814,759
FILING DATE: 30-DEC-1991
ATTORNEY/AGENT INFORMATION:
NAME: Stratford, Carol A.
REGISTRATION NUMBER: 34,444
REFERENCE/DOCKET NUMBER: 5865-0009.30
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0880
TELEFAX: (415) 324-0960
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 25 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2
FEATURE:
NAME/KEY: Modified-site
LOCATION: 12
OTHER INFORMATION: /note- "where x is Nle"
US-08-049-794-12

Query Match 80.4%; Score 123; DB 1; Length 25;
Best Local Similarity 76.0%; Pred. No. 6e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
||| | ||| : ||||| |||||
Db 1 CKGAGAKSRLXYDCTGSCRSKGC 25

RESULT 5

US-08-496-847-12
Sequence 12, Application US/08496847
Patent No. 5795864
GENERAL INFORMATION:
APPLICANT: Amstutz, Gary A.
APPLICANT: Bowersox, Stephen S.
APPLICANT: Gohl, Kishorendra
APPLICANT: Adriaenssens, Peter I.
APPLICANT: Kristipati, Ramasharma
TITLE OF INVENTION: METHODS AND
TITLE OF INVENTION: FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN
NUMBER OF SEQUENCES: 36
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Avenue, Suite 250
CITY: Palo Alto
STATE: CA
COUNTRY: US
ZIP: 94306-1546
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSeq for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/496,847
FILING DATE: 27-JUN-1995
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Stratford, Carol A.
REGISTRATION NUMBER: 34,444
REFERENCE/DOCKET NUMBER: 5865-0009.31
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-0880
TELEFAX: 650-324-0960

INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 25 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2
FEATURE:
NAME/KEY: Modified-site
LOCATION: 12
OTHER INFORMATION: /note- "where x is Nle"
US-08-496-847-12

Query Match 80.4%; Score 123; DB 1; Length 25;
Best Local Similarity 76.0%; Pred. No. 6e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRIRAYNCTGSCRSKGC 25
||| | ||| : ||||| |||||
Db 1 CKGAGAKSRLXYDCTGSCRSKGC 25

RESULT 6

US-08-742-774-12
Sequence 12, Application US/08742774
Patent No. 5824645
GENERAL INFORMATION:
APPLICANT: JUSTICE, ALAN
APPLICANT: SINGH, TEJINDER
APPLICANT: GOHIL, KISHOR C
APPLICANT: VALENTINO, KAREN L
APPLICANT: MILJANICH, GEORGE P
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND
TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: Law Offices of Peter Dehlinger
STREET: 350 Cambridge Avenue, Suite 300
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94306
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/742,774
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/675,354
FILING DATE: 03-JUL-1996
APPLICATION NUMBER: US/08/049,794
FILING DATE: 1993-APR-15
APPLICATION NUMBER: US 07/814,759
FILING DATE: 30-DEC-1991
ATTORNEY/AGENT INFORMATION:
NAME: Stratford, Carol A.
REGISTRATION NUMBER: 34,444
REFERENCE/DOCKET NUMBER: 5865-0009.30
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0880
TELEFAX: (415) 324-0960
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 25 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein

; Patent No. 5994305
; GENERAL INFORMATION:
; APPLICANT: JUSTICE, ALAN
; APPLICANT: SINGH, TEJINDER
; APPLICANT: GOHIL, KISHOR C
; APPLICANT: VALENTINO, KAREN L
; APPLICANT: MILJANICH, GEORGE P
; TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND
; TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA
; NUMBER OF SEQUENCES: 34
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Law Offices of Peter Dehlinger
; STREET: 350 Cambridge Avenue, Suite 300
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/138,439
; FILING DATE:
; CLASSIFICATION:
; PRIORITY APPLICATION DATA:
; APPLICATION NUMBER: US/08/049,794
; FILING DATE: 1993-04-15
; APPLICATION NUMBER: US 07/814,759
; FILING DATE: 30-DEC-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Stratford, Carol A.
; REGISTRATION NUMBER: 34,444
; REFERENCE/DOCKET NUMBER: 5865-0009.30
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 324-0880
; TELEFAX: (415) 324-0960
; INFORMATION FOR SEQ ID NO: 12:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 25 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: SNX-194, FIGURE 2
; FEATURE:
; NAME/KEY: Modified-site
; LOCATION: 12
; OTHER INFORMATION: /note- "where X is Nle"
; US-09-138-439-12

Query Match 80.4%; Score 123; DB 2; Length 25;
Best Local Similarity 76.0%; Pred. No. 6e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25
||| | ||| : ||||| |||||
Db 1 CKGAGAKCSRLXYDCTGSCRSKGC 25

RESULT 10
US-08-613-400A-12
; Sequence 12, Application US/08613400A
; Patent No. 6054429
; GENERAL INFORMATION:
; APPLICANT: Bowersox, S. Scott
; APPLICANT: Gadbois, Theresa
; APPLICANT: Pettus, Mark, R.
; APPLICANT: Luther, Robert, R.
; TITLE OF INVENTION: IMPROVED EPIDURAL
; TITLE OF INVENTION: METHOD OF PRODUCING ANALGESIA

; NUMBER OF SEQUENCES: 36
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Avenue, Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: US
; ZIP: 94306-1546
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/613,400A
; FILING DATE: 08-MAR-1996
; CLASSIFICATION: 514
; PRIORITY APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Stratford, Carol A
; REGISTRATION NUMBER: 34,444
; REFERENCE/DOCKET NUMBER: 5865-0019
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
; INFORMATION FOR SEQ ID NO: 12:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 25 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: SNX-194, FIGURE 2
; FEATURE:
; NAME/KEY: Modified-site
; LOCATION: 12
; OTHER INFORMATION: /note- "where X is Nle"
; US-08-613-400A-12

Query Match 80.4%; Score 123; DB 3; Length 25;
Best Local Similarity 76.0%; Pred. No. 6e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25
||| | ||| : ||||| |||||
Db 1 CKGAGAKCSRLXYDCTGSCRSKGC 25

RESULT 11
US-09-298-017-12
; Sequence 12, Application US/09298017
; Patent No. 6087091
; GENERAL INFORMATION:
; APPLICANT: JUSTICE, ALAN
; APPLICANT: SINGH, TEJINDER
; APPLICANT: GOHIL, KISHOR C
; APPLICANT: VALENTINO, KAREN L
; APPLICANT: MILJANICH, GEORGE P
; TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND
; TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA
; NUMBER OF SEQUENCES: 34
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Law Offices of Peter Dehlinger
; STREET: 350 Cambridge Avenue, Suite 300
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/298,017
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/049,794
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Stratford, Carol A.
REGISTRATION NUMBER: 34,444
REFERENCE/DOCKET NUMBER: 5865-0009.30
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0880
TELEFAX: (415) 324-0960
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 25 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2
FEATURE:
NAME/KEY: Modified-site
LOCATION: 12
OTHER INFORMATION: /note= "where X is Nle"
US-09-298-017-12

Query Match 80.4%; Score 123; DB 3; length 25;
Best Local Similarity 76.0%; Pred. No. 6e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25
Db 1 CKGAGAKCSRLXYDCTGSCRSKGC 25

RESULT 12
US-09-392-979A-12
Sequence 12, Application US/09392979A
Patent No. 6136786
GENERAL INFORMATION:
APPLICANT: JUSTICE, ALAN
APPLICANT: SINGH, TEJINDER
APPLICANT: GOHIL, KISHOR C
APPLICANT: VALENTINO, KAREN L
APPLICANT: MILJANICH, GEORGE P
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND
TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: Law Offices of Peter Dehlinger
STREET: 350 Cambridge Avenue, Suite 300
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94306
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/392,979A
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/049,794
FILING DATE: 1993-04-15

APPLICATION NUMBER: US 07/814,759
FILING DATE: 30-DEC-1991
ATTORNEY/AGENT INFORMATION:
NAME: Stratford, Carol A.
REGISTRATION NUMBER: 34,444
REFERENCE/DOCKET NUMBER: 5865-0009.30
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0880
TELEFAX: (415) 324-0960
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 25 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: NO
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: SNX-194, FIGURE 2
FEATURE:
NAME/KEY: Modified-site
LOCATION: 12
OTHER INFORMATION: /note= "where X is Nle"
US-09-392-979A-12

Query Match 80.4%; Score 123; DB 4; length 25;
Best Local Similarity 76.0%; Pred. No. 6e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25
Db 1 CKGAGAKCSRLXYDCTGSCRSKGC 25

RESULT 13
US-07-789-913-9
Sequence 9, Application US/07789913
Patent No. 5559095
GENERAL INFORMATION:
APPLICANT: Miljanich, George P.
APPLICANT: Bowersox, Stephen S.
APPLICANT: Fox, James A.
APPLICANT: Valentino, Karen L.
APPLICANT: Biltner, Robert S.
APPLICANT: Yamashiro, Donald H.
TITLE OF INVENTION: Delayed Treatment Method of Reducing
TITLE OF INVENTION: Ischemia-Related Neuronal Damage
NUMBER OF SEQUENCES: 28
CORRESPONDENCE ADDRESS:
ADDRESSEE: Law Offices of Peter Dehlinger
STREET: 350 Cambridge Avenue, Suite 300
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94306
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/789,913
FILING DATE: 19911112
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/561,766
FILING DATE: 02-AUG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/440,094
FILING DATE: 22-NOV-1989
ATTORNEY/AGENT INFORMATION:
NAME: Stratford, Carol A.
REGISTRATION NUMBER: 34,444
REFERENCE/DOCKET NUMBER: 5865-0005.30

```

; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 324-0880
; TELEFAX: (415) 324-0960
; INFORMATION FOR SEQ ID NO: 9:
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 25 amino acids
;   TYPE: AMINO ACID
;   TOPOLOGY: both
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: SNX-190
US-07-789-913-9

Query Match          79.7%; Score 122; DB 1; Length 25;
Best Local Similarity 76.0%; Pred. No. 7.7e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25
    ||| | ||| : ||| ||| ||| |||
Db 1 CKGAGAKCSRLMYDCCCTGSCRSKGC 25

RESULT 14
US-07-789-913-12
; Sequence 12, Application US/07789913
; Patent No. 5559095
; GENERAL INFORMATION:
; APPLICANT: Miljanich, George P.
; APPLICANT: Bowersox, Stephen S.
; APPLICANT: Fox, James A.
; APPLICANT: Valentino, Karen L.
; APPLICANT: Bitner, Robert S.
; APPLICANT: Yamashiro, Donald H.
; TITLE OF INVENTION: Delayed Treatment Method of Reducing
; TITLE OF INVENTION: Ischemia-Related Neuronal Damage
; NUMBER OF SEQUENCES: 28
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Law Offices of Peter Dehlinger
; STREET: 350 Cambridge Avenue, Suite 300
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/789,913
; FILING DATE: 19911112
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/561,766
; FILING DATE: 02-AUG-1990
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/440,094
; FILING DATE: 22-NOV-1989
; ATTORNEY/AGENT INFORMATION:
; NAME: Stratford, Carol A.
; REGISTRATION NUMBER: 34,444
; REFERENCE/DOCKET NUMBER: 5865-0005.30
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 324-0880
; TELEFAX: (415) 324-0960
; INFORMATION FOR SEQ ID NO: 12:
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 25 amino acids
;   TYPE: AMINO ACID
;   TOPOLOGY: both
; MOLECULE TYPE: peptide
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; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: SNX-194
; FEATURE:
; NAME/KEY: Modified-site
; LOCATION: 12.13
; OTHER INFORMATION: /note="where Xaa is No. 55590951leucine"
US-07-789-913-12

Query Match          79.7%; Score 122; DB 1; Length 25;
Best Local Similarity 76.0%; Pred. No. 7.7e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSR1AYNCTGSCRSKGC 25
    ||| | ||| : ||| ||| ||| |||
Db 1 CKGKAGAKCSRLXYDCCCTGSCRSKGC 25

RESULT 15
US-08-049-794-9
; Sequence 9, Application US/08049794
; Patent No. 5587454
; GENERAL INFORMATION:
; APPLICANT: JUSTICE, ALAN
; APPLICANT: SINGH, TEJINDER
; APPLICANT: GOHIL, KISHOR C
; APPLICANT: VALENTINO, KAREN L.
; APPLICANT: MILJANICH, GEORGE P
; TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND
; TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA
; NUMBER OF SEQUENCES: 34
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Law Offices of Peter Dehlinger
; STREET: 350 Cambridge Avenue, Suite 300
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/049,794
; FILING DATE: 19930415
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/814,759
; FILING DATE: 30-DEC-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Stratford, Carol A.
; REGISTRATION NUMBER: 34,444
; REFERENCE/DOCKET NUMBER: 5865-0009.30
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 324-0880
; TELEFAX: (415) 324-0960
; INFORMATION FOR SEQ ID NO: 9:
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 25 amino acids
;   TYPE: AMINO ACID
;   TOPOLOGY: linear
; MOLECULE TYPE: protein
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: SNX-190, FIGURE 2
US-08-049-794-9

Query Match          79.7%; Score 122; DB 1; Length 25;
Best Local Similarity 76.0%; Pred. No. 7.7e-07;
Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;
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Wed May 21 08:22:53 2003

us-09-910-082a-375.ra1

Page 8

OY 1 CKGTGKPCSR1AYNCCTGSGCRSGKC 25
||| | ||: | |||||
Db 1 CKGAGACSR1MYDCCTGSGCRSGKC 25

Search completed: May 20, 2003, 15:42:42
Job time : 10.8958 secs